BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 29.05.97 Edition Test oil : ISO 4113 Co In Pu EP Go Go Go Cu Cu Cu Mo Po TE In Te te To

Combination No.	: F 002 A0Z 024		
Injection pump Pump designation EP type number	: PES6A95D320/3RS2881 : 9 410 037 215	(A) INJECTION PUM Set equal deliver per values	y quant.
Governor Governer design. Governer no.	: RSV4751150A0C896R : F 002 A20 218	BEGINNING OF DELI	VERY
Cust. part No.		Test pressure bar Tolerance bar	: 17.0 : +- 1.0
Customer-spec. in		† Prestroke mm † Tolerance mm † Check	: 2.85 : +- 0.05
Motor	: 6BTA	tolerance mm	: +- 0.10
Power KW		† Rack travel in mm † Tolerance mm	
TEST BENCH REQUIR	ENEW 12	† Firing order	: 1-5-3-6-
Inlet line	: 3.2	+	: 4
Test oil inlet temp. °C Tolerance °C	: 40 : +- 2.0	+	: 0-60-120-180-7 : -300
		Start of delivery	blocking
Overflow valve	: 2 417 413 093	°NW after s.o.d. Tolerance	: 8.50 : +- 0.50
Inlet press. bar Tolerance bar	: 2.0 : + 0.1	Check tolerance °NW	
Test nozzle holde assembly	: 1 688 901 101	Barrel no.	: 1
Opening pressure bar	: 208.5	BASIC SETTING	
Tolerance bar	: +- 1.5	Rated speed rpm	: 1150
Test lines	: 1 680 750 014	+ Rack travel in mm Tolerance mm	: 13.15 : +- 0.05
Outside diameter	: 6.0	- Total arice imil	

x inside diameter : 2.0
x length mm : 600

3- 6- 2-

20-180-240

REMARKS

Del. quantity cm3/1000 strokes : 110.0	+ Aneroid pressure + hPa : 900 + Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 110.0 Tolerance
Check tolerance cm3/1000s. : +- 3.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000s. : +- 3.0
Spreed	+ Spreed + Tolerance + cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	+
	+ CONTROL LEVER
Rated speed rpm : 475	control lever position degree : 106.0 tolerance degree : + 4.0
Rack travel in mm : 5.80 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 22.0	T RATED SPEED + rack travel mm : 12.10 + Rated speed rpm : 1220
Tolerance cm3/1000 strokes : +- 2.0	Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : +- 4.5 Spreed	+ rack travel mm : 6.70 + Rated speed rpm : 1280 + Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. : 8.0	+ Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ rack travel mm : 6.70 + Rated speed rpm : 1280 + Tolerance 1/min : +- 15 +
GUIDE SLEEVE POSITION	<u> </u>
	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 83.0 tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Control lever difference Grad: 23.0
governor spring pre-tension	tolerance degree : +- 6.0
click setting $x : 3.75$	Setting point w/out bumper spring
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 475 rack travel mm : 5.30 Tolerance mm : +- 0.10
Rated speed rpm : 1150	Rated speed rpm : 100

CRT mm min.	: > 19.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 475 : 5.80 : +- 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1150 : 13.15 : +- 0.05
Rated speed rpm	: 750
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 900
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 11.05 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 590 : 12.60 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 475 : 12.20 : + 0.20
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa	-
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes	: 87.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000s.	: +- 3.0

STARTING FUEL DELIVERY				
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 100 : 20.50 : +- 0.50			
cm3/1000 strokes	: 120.5			
Tolerance cm3/1000 strokes	: +- 10.0			
Check tolerance cm3/1000s.	: +- 15.0			
LOW IDLE				
Rated speed rpm	: 475			
Rack travel in mm Tolerance mm Del. quantity	: 5.80 : +- 0.10			
cm3/1000 strokes Tolerance	: 22.0			
cm3/1000 strokes Check tolerance	: +- 2.0			
cm3/1000s. Spreed	: +- 4.5			
	: 6.0			
Check tolerance cm3/1000s.	: 8.0			

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 30.05.97 : ISO 4113

Combination No. : F 002 A0Z 062

Injection pump

Pump designation : PES4A95D320/3RS2927

EP type number : F 002 A10 017

Governor

Governer design. : RSV475...1100A2C942R

Governer no. : F 002 A20 243

Cust. part No. : 3930142

Customer-spec. information Customer : CDC Motor : 4BNA3.9 Power KW : 50.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. *C : 40 Tolerance *C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x length mm : 600

x inside diameter: 2.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.75 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.25 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 82.0	+ Aneroid pressure + hPa : -
Tolerance cm3/1000 strokes : +- 1.0	Del. quantity cm3/1000 strokes : 82.0 Tolerance
Check tolerance cm3/1000s. : +- 3.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000s. : +- 3.0
Spreed	Spreed Tolerance cm3/1000 strokes : 3.5
Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	‡
	CONTROL LEVER
Rated speed rpm : 475	control lever position degree : 87.0 tolerance degree : +- 4.0
Rack travel in mm : 4.60 Tolerance mm : + 0.10 Del. quantity	+ RATED SPEED + rack travel mm : 8.20
cm3/1000 strokes : 13.5 Tolerance	Rated speed rpm : 1155 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 4.00 Rated speed rpm : 1215
Spreed Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 3.5 Check tolerance	Tolerance mm : +- 0.55 Rated speed rpm : 1450
cm3/1000s. : 5.5	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1215 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	+ control lever + position degree : 72.0 + tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Control lever difference Grad : 15.0
governor spring pre-tension click setting x : 3.75	tolerance degree : +- 6.0 Setting point w/out bumper spring
	+ Rated speed rpm : 475 + rack travel mm : 4.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 1100	Rated speed rpm : 100
	ı

CRT mm min. : > 19.00 Testing: : 475 Rated speed rpm rack travel mm : 4.60 Tolerance mm : +- 0.10 TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 9.25 Tolerance mm : **←** 0.05 Rated speed rpm : 600 rack travel mm : 9.90 Tolerance mm : +- 0.10 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 600 Rated speed rpm : Del. quantity cm3/1000 strokes : 79.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s.4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 120.0 Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000S. : +- 15.0 LOW IDLE Rated speed rpm : 475 Rack travel in mm : 4.60 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 13.5

A06

Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 03.06.97 Edition Test oi : ISO 4113 Combination No. : 0 402 646 739 Injection pump Pump designation : PE6P120A320LS7904 EP type number : 0 412 626 961 Governor Governer design. : RQ750PA1326 Governer no. : 0 421 801 815 Cust. part No. : 04222 3926 KY Customer-spec. information Customer : KHD
Motor : BF6M1015/C Power KW : 239.0 TEST BENCH REQUIREMENTS Inlet line : 3.2 Test oil inlet temp. °C : 40
Tolerance °C : + 2.0 Overflow valve : 2 417 413 033 Inlet press. bar : 2.5 Tolerance bar : +- 0.1 Overflow quantity min. L/h : 250 Tolerance L/h : + 20.0

Test lines : 1 680 750 075 Outside diameter : 8.0 x inside diameter : x length mm : 1000 REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values ____ BEGINNING OF DELIVERY Test pressure bar : 26.0 Tolerance bar : + 1.0 Prestroke mm : 3.65 Tolerance mm : + 0.05 Check tolerance mm : +- 0.10 Rack travel in mm : 10.50 Tolerance mm : +- 1.50 Firing order : 6-3-5-2-4-: 1 Phasing : 0-60-120-180-240 : -300 : +- 0.50 Tolerance Check tolerance *NW : +- 0.75 Start of delivery blocking "NW after s.o.d. : 300.00 Tolerance : +- 0.50 Check tolerance °NW : +- 0.75 Barrel no. : 6 BASIC SETTING

Test nozzle holde

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

: 1 688 901 105

assembly

Rated speed rpm : 700	Rated speed rpm : 271 guide sleeve
Rack travel in mm : 12.40 Tolerance mm : +- 0.05	travel mm : 1.00 Tolerance mm : +- 0.10
Del. quantity cm3/1000 strokes : 365.0	+ Rated speed rpm : 560 + guide sleeve + travel mm : 3.24
Tolerance cm3/1000 strokes : + 1.0	Tolerance mm : +- 0.10 Rated speed rpm : 1154
Check tolerance cm3/1000s. : +- 4.0	guide sleeve + travel mm : 12.00 + Tolerance mm : +- 0.10
Spreed	Rated speed rpm : 1230
Tolerance cm3/1000 strokes : 5.0	travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
	Rated speed rpm : 700 Aneroid pressure
Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 20.0	+ hPa : - + Del. quantity + cm3/1000 strokes : 365.0
Tolerance cm3/1000 strokes : +- 3.0	+ Tolerance + cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000S. : +- 6.0 Spreed	+ Check tolerance + cm3/1000s. : +- 4.0 + Spreed
Tolerance cm3/1000 strokes : 8.0 Check tolerance	+ Tolerance + cm3/1000 strokes : 5.0 + Check tolerance
cm3/1000s. : 12.0	- cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 109.0 tolerance degree : +- 4.0
Rated speed rpm : 745 guide sleeve travel mm : 4.54	+ RATED SPEED
Tolerance mm : +- 0.15	rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm : 300 guide sleeve travel mm : 1.24	+ Rated speed rpm : 900 + ASSEMBLY GOVERNOR SETTING
Tolerance mm : +- 0.20	Rated speed rpm : 750
Rated speed rpm : 860 guide sleeve travel mm : 5.59	rack travel mm : 11.40 Rated speed rpm : 780
Tolerance mm : +- 0.10	Tolerance 1/min : +- 4

rack travel mm	: 0.50	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50 +
Tolerance mm Rated speed rpm	: +- 0.50 : 900	LOW IDLE
Rated speed rpm rack travel mm	: 11.40	control lever position degree : 67.0 tolerance degree : +- 4.0
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	TORQUE CONTROL Rated speed rpm : 700
rack travel mm Tolerance mm		+ Rated speed rpm : 700 + rack travel mm : 12.40 + Tolerance mm : +- 0.05
Rated speed rpm rack travel mm		Start interlock
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	Rated speed rpm : > 100 Rated speed rpm : < 560 Check
rack travel mm Tolerance mm Rated speed rpm	: +- 0.50	speed 1/min : > 80
Rated speed rpm rack travel mm		
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	+ STARTING FUEL DELIVERY + Rated speed rpm : 100 + rack travel mm : 20.25
rack travel mm Tolerance mm		Tolerance mm : +- 0.75 Del. quantity cm3/1000 strokes : 210.0 Tolerance
Rated speed rpm rack travel mm		
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	+
	. 4.50	
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50	LOW IDLE Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 20.0
Tolerance mm	: 0.50 : + 0.50 : 900	Rated speed rpm : 300 Del. quantity

Check tolerance	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.06.97 : ISO 4113

Combination No. : 0 402 746 608

Injection pump

Pump designation : PES6P120A320RS7359

EP type number : 0 412 726 925

Governor

Governer design. : RQ275/1050PA1275

Governer no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDRO62045 F/C41

Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: 40 : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 220
Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Outside diameter : 6.0

x inside diameter :

x length mm : 600

Test lines : 1 680 750 008

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.70 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.25

Tolerance mm : +- 0.75

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: -500 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

 $^{\circ}$ NW after s.o.d. : -0.95

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : Tolerance mm :		Rated speed rpm : 1050 guide sleeve travel mm : 6.70 Tolerance mm : +- 0.10
BASIC SETTING	+	Total differential to the second
Rated speed rpm :	1050	Rated speed rpm : 648 guide sleeve travel mm : 6.18
Del. quantity cm3/1000 strokes :	176.0	Tolerance mm : +- 0.10 Rated speed rpm : 375
Tolerance cm3/1000 strokes :	+ 1.0	guide sleeve travel mm : 5.00
Check tolerance cm3/1000S. :	+- 4.0	Rated speed rpm : 450
Spreed		guide sleeve travel mm : 6.00 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes :	5.0	Rated speed rpm : 1300 guide sleeve
Check tolerance cm3/1000s. :	9.0	travel mm : 11.50 Tolerance mm : +- 0.50
Rated speed rpm :	275	Rated speed rpm : 873 guide sleeve travel mm : 6.52
Rack travel in mm : Tolerance mm :	-6.00	Tolerance mm : +- 0.10
Del. quantity cm3/1000 strokes :	+	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : Check tolerance	+- 2.0	control lever position degree : 109
cm3/1000s. : Spreed Tolerance	+- 5.0	Rated speed rpm : 500
cm3/1000 strokes : Check tolerance	+	Rack travel in mm : 20.00 Tolerance mm : +- 0.80
cm3/1000S. :	12.0	FULL LOAD DELIVERY AT FULL LOAD STOP
(B) SETTING OF INJECTION WITH GOVERNOR	CTION PUMP	Rated speed rpm : 1050 Aneroid pressure hPa : 1000
GUIDE SLEEVE TRAVEL	+	Del. quantity cm3/1000 strokes : 176.0 Tolerance
Rated speed rpm : guide sleeve	+	cm3/1000 strokes : +- 1.0 Check tolerance
travel mm : Tolerance mm :	7.06 +- 0.15	cm3/1000S. : +- 4.0 Spreed Tolerance
Rated speed rpm : guide sleeve	275	cm3/1000 strokes : 5.0 Check tolerance
travel mm : Tolerance mm :	2.44 +- 0.20	cm3/1000s. : 9.0

CONTROL LEVER	
control lever position degree tolerance degree	: 276.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: -1.00 : 1115 : +- 5
rack travel mm Rat∉d speed rpm Tolerance 1/min	: -7.70 : 1205 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: +- 0.50
LOW IDLE	
control lever position degree tolerance degree	: 256.0 : + 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 200
CRT mm min.	: < -4.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : -6.00 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: -9.60 : 375 : +- 20
TORQUE CONTROL Rated speed rpm	: 1050
Rated speed rpm rack travel mm Tolerance mm	: 600 : 1.10 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 800 : 0.80 : +- 0.20

ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 1.10 : +- 0.10	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : -0.70 : +- 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 280 : 0.65 : ← 0.15	
Pressure hPa rack travel mm Tolerance mm	: 160 : -0.15 : +- 0.05	
Start interlock		
Rated speed rpm Rated speed rpm	: > 100 : < 195	
Check speed 1/min	: > 80	
Check speed 1/min	: < 215	
FUEL DELIVERY CHARACTERISTICS		
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1000 : 600 : 195.0 : +- 3.0 : +- 6.0	
Aneroid pressure hPa Rated speed rpm	: - : 500	

Del. quantity
cm3/1000 strokes : 151.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : +- 15.0

Check tolerance cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -6.00
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 5.0
Spreed
Tolerance

8.0

12.0

cm3/1000 strokes :

Check tolerance cm3/1000S.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.06.97 : ISO 4113

Combination No. : F 000 409 102

Injection pump

Pump designation : PES6P120A720LS7257

: -11

EP type number : F 000 400 201

Governor

Governer design. : RQV300...950PA1242

Governer no. : 9 420 080 387

Cust. part No. : 0280743302

Customer-spec. information

Customer : MBB

Motor

: OM 447LA Euro II

Power KW : 264.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.3

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

: 4.70 Prestroke mm

: +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00

: 6-2-4-1-5-: 3 Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.30

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 277.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 4.0

Spreed

Talananas	1	
Tolerance cm3/1000 strokes	: 5.0	- - control lever - position degree : – 1
Check tolerance cm3/1000s.	: 9.0	- Rated speed rpm : 1120
		Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Rated speed rpm	. 300	•
	+	- FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	· ·	- Particle was 1
Tolerance mm Del. quantity	: +- 0.10	- Rated speed rpm : 600 - Aneroid pressure
cm3/1000 strokes	: 13.0	- hPa : 1300
Tolerance	1	Del. quantity
cm3/1000 strokes	: +- 3.0	- cm3/1000 strokes : 277.0
Check tolerance	†	Tolerance
cm3/1000s. Spreed	: + 6.0	- cm3/1000 strokes : +- 1.0
Tolerance	I	- Check tolerance - cm3/1000s. ; +- 4.0
cm3/1000 strokes	: 8.0	- Spreed
Check tolerance	_	- Tolerance
cm3/1000s.	: 12.0	- cm3/1000 strokes : 5.0
	1	- Check tolerance - cm3/1000S. : 9.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	-
***************************************		- CONTROL LEVER
GUIDE SLEEVE TRAVE	ĒL +	· •
Dadad awas dawa	700	control lever
Rated speed rpm guide sleeve	: 700	- position degree : 114.0 - tolerance degree : +- 4.0
travel mm	: 4.55	-
Tolerance mm	1	- RATED SPEED
	+	rack travel mm : 12.10
Rated speed rpm guide sleeve	: 1050 +	Rated speed rpm : 1025 Tolerance 1/min : +- 5
	: 7.70	- Tolerance 1/min : +- 5
Tolerance mm	: + 0.10	rack travel mm : 4.00
	+	- Rated speed rpm : 1135
Rated speed rpm	: 300	- Tolerance 1/min : +- 15
guide sleeve travel mm	: 0.75	- - rack travel mm : 0.50
Tolerance mm	: +- 0.25	Tolerance mm : +- 0.50
	+	- Rated speed rpm : 1230
Rated speed rpm	: 500 +	•
guide sleeve	: 3.45	-
travel mm Tolerance mm	: +- 0.25	•
TO CET UTTEC THIS	+	- LOW IDLE
Rated speed rpm	: 1165	-
guide sleeve	1	•
travel mm Tolerance mm	: 9.55 : +- 0.25	- control lever - position degree : 76.0
Toterance mm	+ 0.25	- position degree : 76.0 - tolerance degree : +- 4.0
GUIDE SLEEVE POSIT	LION	Setting point w/out bumper spring

Rated speed rpm : 100

		+ !	Rated speed rpm	: < 220
CRT mm min.	: > 8.00	‡ ,	Check	
Testing:		+ :	speed 1/min	: > 80
Rated speed rpm	: 300		Check speed 1/min	: < 240
rack travel mm	: 5.00	1		2,0
rack travel mm Tolerance mm	: +- 0.10	↓ ·		
		+ !	FUEL DELIVERY CHA	RACTERISTICS
Rated speed rpm	: 325	+		
		ļ ,	Aneroid pressure	
TORQUE CONTROL		+ 1	hPa Rated speed rpm	: 1300
Rated speed rpm	: 600	+ !	Rated speed rpm	: 950
rack travel mm Tolerance mm	: 13.30	+ !	Del. quantity	
Tolerance mm	: +- 0.05		cm3/1000 strokes	: 258.0
			Tolerance	
Rated speed rpm	: 950	+ '	cm3/1000 strokes	: +- 2.0
rack travel mm	: 13.00	+ '	Check tolerance	
Rated speed rpm rack travel mm Tolerance mm	: +- 0.05	+ '	Check tolerance cm3/1000s.	: +- 5.0
		+ :	Spreed	
Rated speed rpm	: 750	†	Tolerance	
rack travel mm Tolerance mm	: 13.30	+ '	cm3/1000 strokes	: 8.0
Tolerance mm	: +- 0.05	+ '	Check tolerance cm3/1000s.	44.5
	222	+	cm3/1000s.	: 12.0
Rated speed rpm	: 900	+		
rack travel mm	: 13.00	+	 	
Tolerance mm	: +- 0.05	+ ,	Aneroid pressure	
		+ 1	hPa	: 1300
		 + 1	hPa Rated speed rpm	: 750
ANEROID/ALTITUDE		+ 1	Del. quantity	
COMPENSATOR TEST			cm3/1000 strokes	: 271.0
			Tolerance	
		+ (cm3/1000 strokes	: +- 2.0
SETTING		+ (Check tolerance	
		+ (Check tolerance cm3/1000s.	: +- 5.0
Rated speed rpm	: 500	+ ;	Spreed	
Pressure hPa	: 1300		Tolerance	
rack travel mm	: 13.30		cm3/1000 strokes	: 8.0
Tolerance mm	: +- 0.05		Check tolerance	
		+	cm3/1000s.	: 12.0
Rated speed rpm	: 500	+		
Pressure hPa	: -	+		
			Aneroid pressure	
MEASUREMENT		+ 1	hPa	:
		+ 1	Rated speed rpm	: 500
Rated speed rpm	: 500		Del. quantity	
_		t t	cm3/1000 strokes	: 146.0
Pressure hPa			Tolerance	
rack travel mm			cm3/1000 strokes	
Tolerance mm	: +- 0.15	+ (Check tolerance	_
		+ (cm3/1000s.	: +- 4.0
Pressure hPa		+ ;	Spreed	
rack travel mm Tolerance mm	: 0.85		Tolerance	
Tolerance mm	: +- 0.10		cm3/1000 strokes	
			Check tolerance	
		 + ,	cm3/1000s.	: 9.0
Start interlock		+		
		+		
Rated speed rpm	: > 100	+		

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 269.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 5.00
Tolerance mm: +- 0.10
Del. quantity
cm3/1000 strokes: 13.0
Tolerance
cm3/1000 strokes: +- 3.0
Check tolerance
cm3/1000s.: +- 6.0
Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.06.97 Test oil : ISO 4113

Combination No. : 0 402 076 775

Injection pump

Pump designation : PES6P100A320LS3342 EP type number : 0 412 006 710

Governor

Governer design. : RSV415...1100P8A597

Governer no. : 0 421 833 463

Cust. part No. : 1824626C91

Customer-spec. information Customer : NAVISTAR : DT-530 : 153.0 Motor Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

: 40 temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8
Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10 Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 104.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance cm3/1000 strokes	: 8.0	+ Rated speed rpm + Tolerance 1/min - Check	
Check tolerance cm3/1000s.	: 12.0	speed 1/min	: +- 10
		rack travel mm Rated speed rpm Tolerance 1/min Check	: 1200
Rack travel in mm Tolerance mm		speed 1/min	: +- 10
(B) SETTING OF IN WITH GOVERNOR	UECTION PUMP	rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1300
		rack travel mm Rated speed rpm Tolerance 1/min	: 1205
GUIDE SLEEVE POSI	TION	+ Check + speed 1/min	: +- 10
control lever position degree Rated speed rpm			
Rack travel in mm Tolerance mm		+ LOW IDLE	
governor spring pre-tension		control lever position degree tolerance degree	
click setting x	: 4.75	Setting point w	out bumper spring
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm	: 100
Rated speed rpm Aneroid pressure	: 1100	CRT mm min.	: > 19.00
hPa Del. quantity	: 1200	+ Testing:	
cm3/1000 strokes Tolerance cm3/1000 strokes	: +- 1.0	+ Rated speed rpm + rack travel mm + Tolerance mm	: 415 : 5.60 : +- 0.10
Check tolerance cm3/1000S.	: +- 3.0	‡ ————	······································
Spreed Tolerance cm3/1000 strokes Check tolerance	: 8.0	+ TORQUE CONTROL + Rated speed rpm + rack travel mm + Tolerance mm	: 1100 : 11.55
	: 12.0	+ Rated speed rpm	: 800
CONTROL LEVER		rack travel mm Tolerance mm	: +- 0.10
control lever position degree tolerance degree	: 107.5 : +- 6.0	ANEROID/ALTITUDE COMPENSATOR TES	
RATED SPEED rack travel mm	: 10.50	SETTING	

Rated speed rpm : 800 Pressure hPa : 1200 rack travel mm : 12.55
Tolerance mm : + 0.10

MEASUREMENT

800 Rated speed rpm :

Pressure hPa 435 rack travel mm : 11.60 : +- 0.20 Tolerance mm

ressure hPa : 250 rack travel mm : 10.05 Pressure hPa : +- 0.05 Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 800 Rated speed rpm : Del. quantity cm3/1000 strokes : 131.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 78.5 Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.50 Tolerance mm

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 25.0 LOW IDLE

Rack travel in mm : 5.60 Tolerance mm : +- 0.10

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 09.06.97 : ISO 4113

Test oil

Combination No. : 0 402 076 819

Injection pump

Pump designation : PES6P120A720RS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV425...1100P2A599

: -9

Governer no. : 0 421 833 606

Cust. part No. : RE500742

Customer-spec. information Customer : DEERE

Motor

: 6081AF001

Power KW

: 187.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C : +- 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05

Check

tolerance mm

: +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5- 3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

°NW after s.o.d. : 8.00 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 14.00 Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Book topyol in many 12 /5	
Rack travel in mm: 12.45 Tolerance mm: +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 161.0	Rated speed rpm : 1100 Aneroid pressure
	hPa : 1600
Tolerance cm3/1000 strokes : +- 1.0	Del. quantity cm3/1000 strokes : 161.0 Tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000s. : +- 3.0 Spreed
Tolerance	Tolerance cm3/1000 strokes : 4.0
cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CIII37 (0003 0.3
	CONTROL LEVER
Rated speed rpm : 425	control lever
† · · · · · · · · · · · · · · · · · · ·	position degree : 97.0
Rack travel in mm : 5.90 Tolerance mm : +- 0.10	tolerance degree : +- 4.0
Del. quantity +	RATED SPEED
cm3/1000 strokes : 29.0 +	rack travel mm : 11.45
Tolerance +	Rated speed rpm : 1145
cm3/1000 strokes : + 2.0 + Check tolerance +	Tolerance 1/min : +- 5
cm3/1000s. : +- 4.5	rack travel mm : 4.00
Spreed	Rated speed rpm : 1205
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : 6.0	0.05
Check tolerance + cm3/1000s. : 8.0 +	rack travel mm : 0.85
	Tolerance mm : +- 0.55 Rated speed rpm : 1350
↓	Nated speed (pill : 1550
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00
WITH GOVERNOR +	Rated speed rpm : 1215
+	Tolerance 1/min : +- 15
†	
GUIDE SLEEVE POSITION	
+	
	LOW IDLE
control lever + position degree : - 3	
position degree : - 3 Rated speed rpm : 800	control lever
	position degree : 75.0
Rack travel in mm : 0.50	tolerance degree : +- 4.0
Tolerance mm : +- 0.20	Setting point w/out bumper spring
governor spring	- 1 2 1 11g partite will add bamper opining
pre-tension +	Rated speed rpm : 425
click setting x : 4.25	rack travel mm : 5.40
‡	Tolerance mm : +- 0.10

Rated speed rpm : 100 Aneroid pressure 1600 hPa CRT mm min. : > 19.00 Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 167.5 Testing: Tolerance 425 cm3/1000 strokes : +- 2.0Rated speed rpm : rack travel mm : 5.90 Check tolerance : +- 0.10 : +-Tolerance mm cm3/1000s. 4.0 TORQUE CONTROL Aneroid pressure Rated speed rpm : 1100 hPa rack travel mm : 12.45 Rated speed rpm : 500 : +- 0.05 Tolerance mm Del. quantity cm3/1000 strokes : 71.0 Rated speed rpm : 700 rack travel mm : 12.80 Tolerance cm3/1000 strokes : +- 2.0Tolerance mm : **←** 0.10 Check tolerance cm3/1000s. : +- 4.0 ANEROID/ALTITUDE COMPENSATOR TEST STARTING FUEL DELIVERY SETTING Rated speed rpm : 100 rack travel mm : 21.00 : +- 0.50 Rated speed rpm : 500 Tolerance mm Pressure hPa : 1600 Del. quantity cm3/1000 strokes : 105.0 Rated speed rpm : 500 Tolerance Pressure hPa cm3/1000 strokes : +- 20.0: 8.80 rack travel mm Check tolerance Tolerance mm : +- 0.20 cm3/1000s. : +- 25.0 **MEASUREMENT** Rated speed rpm : 500 LOW IDLE 960 Pressure hPa 11.70 rack travel mm Rated speed rpm : 425 : +- 0.20 Tolerance mm Rack travel in mm : 5.90 475 Tolerance mm : +- 0.10 Pressure hPa 9.80 rack travel mm Del. quantity : +- 0.05 cm3/1000 strokes : 29.0 Tolerance mm Tolerance cm3/1000 strokes : +- 2.0Start interlock Check tolerance 4.5 cm3/1000s.: +-Rated speed rpm : > 100 Spreed Tolerance Check cm3/1000 strokes : 6.0 80 speed 1/min : > Check tolerance cm3/1000s. 8.0 FUEL DELIVERY CHARACTERISTICS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 06.06.97

Test oil

: ISO 4113

Combination No. : F 002 A0Z 063

Injection pump

Pump designation : PES4A95D320/3RS2927

EP type number : F 002 A10 017

Governor

Governer design. : RSV475...1100A2C943R

Governer no. : F 002 A20 244

Cust. part No. : 3931397

Customer-spec. information Customer : CDC

Motor

: 4BNA3.9

Power KW

: 45.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

2.0

Tolerance bar : +- 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

: 2.85

Prestroke mm Tolerance mm

: +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.75

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 8.20

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 72.5	+ Aneroid pressure + hPa : -
Tolerance cm3/1000 strokes : + 1.0	Del. quantity + cm3/1000 strokes : 72.5 + Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0 + Check tolerance
cm3/1000S. : + 3.0 Spreed	- cm3/1000s. : + 3.0 - Spreed - Tolerance
	+ cm3/1000 strokes : 3.5
Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	CONTROL LEVER
	+
Rated speed rpm : 475	<pre>control lever position degree : 93.0 tolerance degree : +- 4.0</pre>
Rack travel in mm : 4.60 Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity cm3/1000 strokes : 13.5	+ rack travel mm : 7.20 + Rated speed rpm : 1155
Tolerance cm3/1000 strokes : +- 2.0	Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 4.00 Rated speed rpm : 1190
Spreed	+ Rated speed rpm : 1190 + Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 3.5	rack travel mm : 0.85
Check tolerance cm3/1000s. : 5.5	Tolerance mm : +- 0.55 Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : +- 15
	+
GUIDE SLEEVE POSITION	FOM IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 71.0 tolerance degree : + 4.0
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Control lever difference Grad: 22.0
governor spring pre-tension	tolerance degree : +- 6.0
click setting x : 3.75	Setting point w/out bumper spring
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 475 rack travel mm : 4.10
Rated speed rpm : 1100	Tolerance mm : +- 0.10
matta apata . p.m. / 1.00	Rated speed rpm : 100

CRT mm min. ; > 19.00 Testing: Rated speed rpm : 475 rack travel mm 4.60 Tolerance mm : **←** 0.10 TORQUE CONTROL Rated speed rpm : 1100 rack travel mm 8.20 Tolerance mm : + 0.05 600 Rated speed rpm rack travel mm 9.20 Tolerance mm : +- 0.10 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm 600 Del. quantity cm3/1000 strokes : 67.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s.5.0 : +-STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 120.0 Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : +- 15.0 LOW IDLE Rated speed rpm : 475 Rack travel in mm : 4.60 Tolerance mm 0.10 Del. quantity

Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5

End of test specification sheet

cm3/1000 strokes :

13.5

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 09.06.97 Edition : ISO 4113 Test oil Combination No. : 0 402 046 866 Injection pump Pump designation : PES6P120A720RS3346 EP type number : 0 412 026 778 Governor Governer design. : RQ300/1025PA1213 Governer no. : 0 421 801 783 Cust. part No. Customer-spec. information : IVECO-FIAT Customer : 8360.46.4649 Motor TEST BENCH REQUIREMENTS Inlet line : 2.4 Test oil inlet temp. °C Tolerance °C : 1 417 413 034 Overflow valve Inlet press. bar : 2.5 Test nozzle holde assembly : 1 688 901 105 Opening pressure 208.5 har Tolerance bar : +- 1.5 Test lines : 1 680 750 089

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REMARKS
(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values ____
BEGINNING OF DELIVERY
Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm
                     3.55
                : +- 0.05
Tolerance mm
Check
tolerance mm
               : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1-5-3-6-2-
               : 0-60-120-180-240
Phasing
                : -300
Tolerance
                : +- 0.50
Check
               : +- 0.75
tolerance °NW
BASIC SETTING
Rated speed rpm : 1025
Rack travel in mm : 11.90
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 175.0
Tolerance
cm3/1000 \text{ strokes} : +- 1.0
Check tolerance
cm3/1000s.
                : +- 4.0
Spreed
```

x length mm : 600

B01

Outside diameter :

x inside diameter: 3.0

Tolerance +	rack travel mm : 10.90
cm3/1000 strokes : 5.0	Rated speed rpm : 1078
+	Tolerance 1/min : + 8
Check tolerance	Check
cm3/1000s. : 9.0	speed 1/min : +- 13
	rack travel mm : 4.00
1	Rated speed rpm : 1150
Rated speed rpm : 300	Tolerance 1/min : +- 15
1	- Check
Rack travel in mm: 5.50	speed 1/min : +- 20
Tolerance mm : + 0.10	Speed (/illiff) . 20
Del. quantity	rack travel mm : 0.50
cm3/1000 strokes : 20.0	Tolerance mm : +- 0.50
Tolerance	Rated speed rpm : 1300
cm3/1000 strokes : +- 3.0	Rated Speed Phil : 1500
Check tolerance	•
cm3/1000s. : +- 6.0	•
Spreed	•
· · · · · · · · · · · · · · · · · · ·	LOUTNE
Tolerance + cm3/1000 strokes : 8.0 +	LOW IDLE
	•
Check tolerance : 12.0 - 12.0	·
cm3/1000s. : 12.0	control lever
†	position degree : 70.0
(0) 05777110 05 71115077011 01110	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	Setting point w/out bumper spring
†	
<u>†</u>	Rated speed rpm : 200
CUTAT OF THE PROTECTION	
GUIDE SLEEVE POSITION +	- CRT mm min. : > 7.00
· · · · · · · · · · · · · · · · · · ·	
+	
+	· Testing:
control lever	•
position degree : 97	Rated speed rpm : 300
	Rated speed rpm : 300 rack travel mm : 5.50
position degree : 97 Rated speed rpm : 550	Rated speed rpm : 300
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10
position degree : 97 Rated speed rpm : 550	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 175.0	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90 Tolerance mm : +- 0.05
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 175.0 Tolerance	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90 Tolerance mm : +- 0.05
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90 Tolerance mm : +- 0.05 Rated speed rpm : 500 rack travel mm : 11.95
position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90 Tolerance mm : +- 0.05
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position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90 Tolerance mm : +- 0.05 Rated speed rpm : 500 rack travel mm : 11.95 Tolerance mm : +- 0.10 Rated speed rpm : 1025
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position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000s : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90 Tolerance mm : +- 0.05 Rated speed rpm : 500 rack travel mm : 11.95 Tolerance mm : +- 0.10 Rated speed rpm : 1025 rack travel mm : 12.35 Tolerance mm : +- 0.05
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position degree : 97 Rated speed rpm : 550 Rack travel in mm : 14.30 Tolerance mm : + 0.80 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1025 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0	Rated speed rpm : 300 rack travel mm : 5.50 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 380 Tolerance 1/min : +- 20 TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 11.90 Tolerance mm : +- 0.05 Rated speed rpm : 500 rack travel mm : 11.95 Tolerance mm : +- 0.10 Rated speed rpm : 1025 rack travel mm : 12.35 Tolerance mm : +- 0.05
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ANEROID/ALT	TUDE
COMPENSATOR	TEST

SETTING

Rated speed rpm 500 Pressure hPa 900 11.90 rack travel mm Tolerance mm : +- 0.05

500 Rated speed rpm Pressure hPa 9.60 rack travel mm Tolerance mm : +- 0.10

MEASUREMENT

500 Rated speed rpm

270 Pressure hPa rack travel mm 10.00 Tolerance mm : +- 0.20

Pressure hPa 500 11.30 rack travel mm Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 900 Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 168.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s.: +-6.0

Aneroid pressure

hPa Rated speed rpm

500

Del. quantity

cm3/1000 strokes : 102.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s.4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity

cm3/1000 strokes :

90.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 300

5.50 Rack travel in mm : 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 20.0

Tolerance cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000S. : +-6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 09.06.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 046 872

Injection pump

Pump designation : PES6P12OA32ORS3337

EP type number : 0 412 026 770

Governor

Governer design. : RQV300...1250PA1246K

Governer no. : 0 421 815 480

Cust. part No. : CCEP 5155A 66-217

Customer-spec. information

Customer : RENAULT V.I.

: MIDR 06-02-26 U4 Motor

Power KW : 111.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 135

Tolerance l/h: +- 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.10 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 11.00 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

*NW after s.o.d. : 0.08

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

11.00 travel

Difference ° CS : 2.00

1
Rated speed rpm : 300
guide sleeve
+ travel mm : 1.31
Tolerance mm : +- 0.20
Doted appeal rep
+ Rated speed rpm : 900
+ guide sleeve
travel mm : 6.50
Tolerance mm : +- 0.25
Rated speed rpm : 530
+ guide sleeve + travel mm : 3.77
† Tolerance mm : +- 0.25
Dotad around non 1500
+ Rated speed rpm : 1580
+ guide sleeve
travel mm : 13.50
+ Tolerance mm : +- 0.50
†
CUIDE SI FEVE DOSTITON
+ GUIDE SLEEVE POSITION
<u>†</u>
t control lever
!
position degree : - 1
+ Rated speed rpm : 1400
+ Rack travel in mm : 10.50
† Tolerance mm : + 1.50
FULL LOAD DELIVERY AT FULL LOAD STOP
TOLE EDAD DELIVERY AT TOLE EDAD STOP
Rated speed rpm : 1250
Aneroid pressure
+ hPa : -
+ Del. quantity
+ cm3/1000 strokes : 142.0
Tolerance
cm3/1000 strokes : +- 1.0
+ Check tolerance
+ cm3/1000s. : +- 4.0
+ Spreed
+ Tolerance
+ cm3/1000 strokes : 5.0
cm3/1000 strokes : 5.0 Check tolerance
+ cm3/1000 strokes : 5.0
cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER
cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever
cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0 CONTROL LEVER control lever position degree : 296.0
cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever
cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 296.0 tolerance degree : +- 4.0
cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0 CONTROL LEVER control lever position degree : 296.0

Rated speed rpm : 1305 Tolerance 1/min : + 15 rack travel mm -6.60 Rated speed rpm : 1400 Tolerance 1/min : +rack travel mm : -10.10Tolerance mm : +-0.50Rated speed rpm : 1550 LOW IDLE control lever position degree : 242.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 200 CRT mm min. : < -4.80Testing: 300 Rated speed rpm : -5.80 rack travel mm : : +- 0.10 Tolerance mm Rated speed rpm : 380 TORQUE CONTROL Rated speed rpm : 1250 Rated speed rpm : 750 rack travel mm : -1.65 Tolerance mm : +- 0.10 Rated speed rpm : 350 rack travel mm : -2.55 : +- 0.20 Tolerance mm Start interlock Rated speed rpm : > 130 Rated speed rpm : < 245 Check speed 1/min : > 110 Check

255

FUEL DELIVERY CHARACTERISTICS Aneroid pressure Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 102.0Tolerance cm3/1000 strokes : +- 3.0 Check tolerance : +- 6.0 cm3/1000s. STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 108.0 Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000s. : +- 19.0 LOW IDLE Rated speed rpm : 300 Rack travel in mm : -5.80 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : +- 2.0Check tolerance cm3/1000s.5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance : 12.0 cm3/1000s.

End of test specification sheet

speed 1/min : <

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.06.97 Edition Test oil : ISO 4113

Combination No. : 0 402 646 739

Injection pump

Pump designation : PE6P120A320LS7904-1

EP type number : 0 412 626 964

Governor

Governer design. : RQ750PA1326 Governer no. : 0 421 801 815

Cust. part No. : 04222 3926 KY

Customer-spec. information

Customer : KHD

: BF6M1015/C Motor Power KW : 239.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. l/h : 200 Tolerance l/h: +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3
x length mm : 1000 3.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 3.65 Tolerance mm : ← 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : \leftarrow 1.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 300.00 Tolerance : +- 0.50

Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 6

BASIC SETTING

	t
Rated speed rpm : 700	Rated speed rpm : 271 guide sleeve
	travel mm : 1.00
Rack travel in mm : 12.40	+ Tolerance mm : +- 0.10
Tolerance mm : +- 0.05	†
	Rated speed rpm : 560
Del. quantity	guide sleeve
cm3/1000 strokes : 365.0	+ travel mm : 3.24 + Tolerance mm : +- 0.10
Tolerance	T locerative milities . The birth
cm3/1000 strokes : +- 1.0	+ Rated speed rpm : 1154
	guide sleeve
Check tolerance	+ travel mm : 12.00
cm3/1000s. : +- 4.0	† Tolerance mm : +- 0.10
Concod	T
Spreed	+ Rated speed rpm : 1230 + guide sleeve
Tolerance	travel mm : 13.50
cm3/1000 strokes : 5.0	+ Tolerance mm : +- 0.50
Check tolerance	
cm3/1000s. : 9.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
	Aneroid pressure
Rated speed rpm : 300	+ hPa : -
Del. quantity	Del. quantity
cm3/1000 strokes : 20.0	+ cm3/1000 strokes : 365.0
Tolerance	+ Tolerance
cm3/1000 strokes : +- 3.0	+ cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : +- 6.0	+ Check tolerance + cm3/1000s. : +- 4.0
Spreed	+ Spreed
Tolerance	+ Tolerance
cm3/1000 strokes : 8.0	+ cm3/1000 strokes : 5.0
Check tolerance	† Check tolerance
cm3/1000s. : 12.0	+ cm3/1000s. : 9.0
	†
(B) SETTING OF INJECTION PUMP	I
WITH GOVERNOR	+ CONTROL LEVER
	+
GUIDE SLEEVE TRAVEL	position degree : 109.0
Rated speed rpm : 745	tolerance degree : +- 4.0
guide sleeve	RATED SPEED
travel mm : 4.54	+
Tolerance mm : +- 0.15	+ rack travel mm : 0.50
	+ Tolerance mm : +- 0.50
Rated speed rpm : 300	Rated speed rpm : 900
guide sleeve travel mm : 1.24	ASSEMBLY GOVERNOR SETTING
Tolerance mm : +- 0.20	+ ASSEMBLI GOVERNOR SELLTING
To the state of th	Rated speed rpm : 750
Rated speed rpm : 860	rack travel mm : 11.40
guide sleeve	†
travel mm : 5.59 Tolerance mm : +- 0.10	+ Rated speed rpm : 780 + Tolerance 1/min : +- 4
Tolerance mm : +- 0.10	T locerative initity . The st

Rated speed rpm : 900 Rated speed rpm : 751 rack travel mm : 11.40 Rated speed rpm : 781 Tolerance 1/min : + 4 rack travel mm : 0.50 rack travel mm : 0.50 Rated speed rpm : 752 rack travel mm : 11.40 Rated speed rpm : 752 rack travel mm : 11.40 Rated speed rpm : 752 rack travel mm : 11.40 Rated speed rpm : 752 rack travel mm : 11.40 Rated speed rpm : 752 rack travel mm : 4.50 Rated speed rpm : 752 rack travel mm : 4.50 Rated speed rpm : 753 rack travel mm : 4.50 Rated speed rpm : 753 rack travel mm : 4.50 Rated speed rpm : 753 rack travel mm : 4.50 Rated speed rpm : 753 Tolerance 1/min : + 4 rack travel mm : 4.50 Rated speed rpm : 753 Tolerance 1/min : + 4 rack travel mm : 4.50 Rated speed rpm : 753 Tolerance 1/min : + 4 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 754 rack travel mm : 0.50 Rated speed rpm : 754 rack travel mm : 0.50 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 754 rack travel mm : 754 rack travel mm : 14.60 Rated speed rpm : 754 rack travel mm : 14.60 Rated speed rpm : 754 rack travel mm : 14.60 Rated speed rpm : 754 rack travel mm : 14.60 Rated speed rpm : 754 rack travel mm : 14.60 Rated speed rpm : 755 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Rated speed rpm : 764 Tolerance mm : + 0.50 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 Tolerance mm : + 0.50 Rated speed rpm : 755 Tolerance mm : + 0.50 Rated speed rpm : 755 Tolerance mm : + 0.50 Rated speed rpm : 755 rack travel mm : 11.40 Check tolerance rm3/1000 strokes : + 20.0 Tolerance rm3/1000 strokes : + 3.0 Check tolerance rm3/1000 strokes : + 6.0 Spreed Tolerance 1/min : + 4 Tol	rack travel mm		rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm 781	Tolerance mm Rated speed rpm		LOW IDLE
Tolerance 1/min : + 4	rack travel mm	: 11.40	position degree : 62.0
Tack travel mm	Tolerance 1/min	: +- 4	
Rated speed rpm : 782 Tolerance 1/min : +- 4	rack travel mm Tolerance mm	: 0.50 : + 0.50	† rack travel mm : 12.40
Tolerance 1/min : +- 4			Start interlock
rack travel mm : 0.50 Toterance mm : + 0.50 Rated speed rpm : 900 Rated speed rpm : 753 rack travel mm : 11.40 Rated speed rpm : 783 Toterance 1/min : + 4 rack travel mm : 0.50 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 784 Toterance 1/min : + 4 rack travel mm : 0.50 Toterance mm : + 0.50 Rated speed rpm : 784 Toterance 1/min : + 4 rack travel mm : 0.50 Toterance mm : + 0.50 Rated speed rpm : 785 Toterance mm : + 0.50 Rated speed rpm : 755 rack travel mm : 0.50 Toterance mm : + 0.50 Rated speed rpm : 755 rack travel mm : 1.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 785 Toterance 1/min : + 4 Toterance Toterance Toterance Toterance Toterance Toterance Toterance Toterance	Tolerance 1/min	: + 4	+ Rated speed rpm : < 560
Rated speed rpm : 783 Tolerance 1/min : +- 4 rack travel mm : 4.50 Tolerance mm : 4.50 Tolerance mm : 4.50 Tolerance mm : +- 0.75 rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 754 rack travel mm : 11.40 Rated speed rpm : 784 Tolerance 1/min : +- 4 rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 784 Tolerance 1/min : +- 4 rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 900 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 785 rack travel mm : 11.40 Rated speed rpm : 785 rack travel mm : 11.40 Rated speed rpm : 785 rack travel mm : 11.40 Rated speed rpm : 785 rack travel mm : 11.40 Rated speed rpm : 785 rack travel mm : 11.40 Rated speed rpm : 785 rack travel mm : 11.40 Rated speed rpm : 785 Tolerance 1/min : +- 4	Tolerance mm	: 0.50	+ speed 1/min :> 80 + Check
Rated speed rpm : 783 Tolerance 1/min : +- 4			
Tolerance mm : + 0.75 Tolerance mm : + 0.50 Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 24.0 Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 900 Rated speed rpm : 900 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 785 Tolerance 1/min : + 4	Tolerance 1/min	: +- 4	+ Rated speed rpm : 100
Tolerance	rack travel mm	: 0.50	+ Tolerance mm : +- 0.75 + Del. quantity
Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Rated speed rpm : 300 Patent speed rpm : 20.0 Tolerance : m3/1000 strokes : 20.0 Tolerance : m3/1000 strokes : + 3.0 Check tolerance : m3/1000s : + 6.0 Rated speed rpm : 785 Spreed Tolerance 1/min : + 6.0			+ Tolerance + cm3/1000 strokes : +- 20.0
Tolerance 1/min : +- 4 rack travel mm : 4.50 Tack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 900 Rated speed rpm : 755 rack travel mm : 11.40 Rated speed rpm : 785 Tolerance 1/min : +- 4 Tolerance Tolerance 1/min : +- 4 Tolerance Tolerance Tolerance Tolerance Tolerance	rack travel mm	: 11.40	
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Tolerance Cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Rated speed rpm : 785 Tolerance 1/min : +- 4 Tolerance Toleran	Tolerance mm	: +- 0.50	Rated speed rpm : 300 Del. quantity
Rated speed rpm : 785 + cm3/1000s. : +- 6.0 Rated speed rpm : 785 + Spreed Tolerance 1/min : +- 4 + Tolerance			Tolerance cm3/1000 strokes : +- 3.0
Tolerance 1/min : +- 4 + Tolerance	Rated speed rpm	: 785	- cm3/1000s. : +- 6.0 - Spreed
- CHO/1000 301 0003 . 0.0	Tolerance 1/min rack travel mm	_	Tolerance cm3/1000 strokes : 8.0

cm3/1000s.	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05,06,97 Test oil : ISO 4113

Combination No. : 0 402 646 785

Injection pump

Fump designation : PE6P12DA32OLS7869 EP type number : 0 412 626 887

Governor

Governer design. : RQV300...1050PA1078K

Governer no. : 0 421 815 359

Cust. part No. : 9275445

Customer-spec. information Customer : LIEBHERR Motor : D 9406 TI Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Overflow quantity
min. L/h : 165
Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65
Toierance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-6-3-5-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.30

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 291.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance		
cm3/1000s.	: +- 4.0	+ Rated speed rpm : 450
U	1.0	+ guide sleeve
Spreed		travel mm : 3.66
Spr eed		
Talamana		Tolerance mm : +- 0.25
Tolerance	. .	†
cm3/1000 strokes	: 5.0	+ Rated speed rpm : 1320
		+ guide sleeve
Check tolerance		† travel mm : 13.50
cm3/1000S.	: 9.0	+ Tolerance mm : +- 0.50
		+
		+
		→ GUIDE SLEEVE POSITION
Rated speed rpm	: 300	1
2,000		1
Rack travel in mi	n : 5.00	+ control lever
Tolerance mm		position degree : - 1
Del. quantity		+ Rated speed rpm : 1185
cm3/1000 strokes	: 25.0	T Nated Speed 1 pill : 1103
Tolerance	. 25.0	Rack travel in mm: 10.80
cm3/1000 strokes	70	
	; +- 3.0	+ Tolerance mm : +- 1.30
Check tolerance		†
cm3/1000s.	: +- 6.0	
Spreed		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance		†
cm3/1000 strokes	: 6.0	+ Rated speed rpm : 1050
Check tolerance		+ Aneroid pressure
cm3/1000S.	: 10.0	+ hPa : 1550
		+ Del. quantity
		+ cm3/1000 strokes : 291.0
(B) SETTING OF IN	NJECTION PUMP	† Tolerance
WITH GOVERNOR		+ cm3/1000 strokes : +- 1.0
	17	† Check tolerance
GUIDE SLEEVE TRAV		+ Check tolerance + cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAV	/EL	- Check tolerance - cm3/1000s. : +- 4.0 - Spreed
		Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
Rated speed rpm		Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Rated speed rpm guide sleeve	: 1117	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rated speed rpm guide sleeve travel mm	: 1117 : 10.38	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Rated speed rpm guide sleeve	: 1117	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : + 0.25	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 1117 : 10.38	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1117 : 10.38 : + 0.25 : 300	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1117 : 10.38 : ← 0.25 : 300 : 1.69	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1117 : 10.38 : + 0.25 : 300	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : ← 0.25 : 300 : 1.69	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm Guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353 : 2.45	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5 rack travel mm : 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1200
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm Tolerance mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353 : 2.45 : + 0.25	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5 rack travel mm : 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353 : 2.45	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353 : 2.45 : + 0.25 : 403	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : +- 15 rack travel mm : 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353 : 2.45 : + 0.25 : 403 : 3.18	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : +- 15 rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1117 : 10.38 : + 0.25 : 300 : 1.69 : + 0.25 : 746 : 6.20 : + 0.25 : 353 : 2.45 : + 0.25 : 403	Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 121.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1110 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : +- 15 rack travel mm : 0.50

Tolerance 1/min : +- 15	Rated speed rpm : 1050 Pressure hPa : - rack travel mm : 9.10 Tolerance mm : + 0.20
LOW IDLE	MEASUREMENT
control lever position degree : 70.0 tolerance degree : +- 4.0	Rated speed rpm : 1050 Pressure hPa : 670 rack travel mm : 11.00 Tolerance mm : +- 0.05
Setting point w/out bumper spring	Pressure hPa · 600
Rated speed rpm : 200	Pressure hPa : 600 rack travel mm : 10.50 Tolerance mm : +- 0.20
CRT mm min. :> 6.50	‡
Testing:	FILE DEL TVEDY CHARACTERISTICS
Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : + 0.10 Rated speed rpm : 400	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1550 Rated speed rpm : 500 Del. quantity
TORQUE CONTROL Rated speed rpm : 1050 rack travel mm : 12.30 Tolerance mm : +- 0.05	- cm3/1000 strokes : 288.0 - Tolerance - cm3/1000 strokes : +- 3.0 - Check tolerance - cm3/1000s. : +- 6.0
Rated speed rpm : 500 rack travel mm : 10.10 Tolerance mm : +- 0.10	Aneroid pressure hPa : 1550 Rated speed rpm : 800
Rated speed rpm : 800 rack travel mm : 11.60 Tolerance mm : +- 0.10	Del. quantity + cm3/1000 strokes : 301.0 + Tolerance + cm3/1000 strokes : + 3.0
Rated speed rpm : 950 rack travel mm : 12.20 Tolerance mm : +- 0.10	+ Check tolerance + cm3/1000s. : +- 6.0
Rated speed rpm : 600 rack travel mm : 10.20 Tolerance mm : +- 0.10	Aneroid pressure hPa : - Rated speed rpm : 550 Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST	+ cm3/1000 strokes : 245.0 + Tolerance - cm3/1000 strokes : +- 1.0
SETTING	+ Check tolerance + cm3/1000s. : + 4.0 + Spreed
Rated speed rpm : 1050 Pressure hPa : 1550	Tolerance : 8.0 Check tolerance
rack travel mm : 12.30 Tolerance mm : +- 0.05	cm3/1000s. : 12.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 9.90
Tolerance mm : +- 0.30
Del. quantity
cm3/1000 strokes : 185.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000S : +- 14.0

LOW IDLE

Rated speed rpm 300 Rack travel in mm : 5.00 Tolerance mm 0.10 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. **6.0** Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.06.97 Test oil : ISO 4113

Combination No. : 0 402 646 785A

Injection pump

Pump designation : PE6P120A320LS7869 EP type number : 0 412 626 887

Governor

Governer design. : RQV300...1050PA1078K

Governer no. : 0 421 815 359

Cust. part No. : 9275445

Customer—spec. information Customer : LIEBHERR Motor : D 9406 TI

Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 165 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-6-3-5-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.30 Tolerance mm : +- 0.05

roterance mm : +- U.

Del. quantity

cm3/1000 strokes : 291.0

Tolerance

cm3/1000 strokes : +- 1.0

_----

Check tolerance + cm3/1000s. : +- 4.0 +	Rated speed rpm : 450
Spreed	guide sleeve ' travel mm : 3.66
+	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1320
Check tolerance cm3/1000s. 9.0	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
	
†	
Poted aroad rum . 300	GUIDE SLEEVE POSITION
Rated speed rpm : 300	
Rack travel in mm: 5.00	control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity +	Rated speed rpm : 1185
cm3/1000 strokes : 25.0	
Tolerance +	Rack travel in mm: 11.00
cm3/1000 strokes : +- 3.0 +- +- +- +- +- +- +- +- +- +- +- +-	Tolerance mm : +- 1.30
cm3/1000s. : + 6.0	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance +	
cm3/1000 strokes : 6.0 +	Rated speed rpm : 1050
Check tolerance + cm3/1000S. : 10.0	Aneroid pressure
cm3/1000s. : 10.0	hPa : 1550 Del. quantity
1	cm3/1000 strokes : 291.0
(B) SETTING OF INJECTION PUMP	Tolerance
WITH GOVERNOR +	cm3/1000 strokes : 1.0
+	Check tolerance
CHINE OF ECUE TOWNER	cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL	Spreed Tolerance
Rated speed rpm : 1117	cm3/1000 strokes : 5.0
guide sleeve	Check tolerance
travel mm : 10.38 +	cm3/1000s. : 9.0
Tolerance mm : +- 0.25	
Rated speed rpm : 300	
guide sleeve	CONTROL LEVER
travel mm : 1.69 +	
Tolerance mm : + 0.25 +	control lever
Dated around non- a 7/4	position degree : 121.0
Rated speed rpm : 746 + guide sleeve +	tolerance degree : +- 4.0
guide sleeve + travel mm : 6.20 + Tolerance mm : + 0.25 +	RATED SPEED
Tolerance mm : + 0.25	rack travel mm : 11.00
	Rated speed rpm : 1105
Rated speed rpm : 353	Tolerance 1/min : +- 5
guide sleeve + travel mm : 2.45 +	rack traval mm · / OO
travel mm : 2.45 Tolerance mm : +- 0.25	rack travel mm : 4.00 Rated speed rpm : 1200
+ 0.551 Gride min	Tolerance 1/min : +- 15
Rated speed rpm : 403	
guide sleeve +	rack travel mm : 0.50
travel mm : 3.18 Tolerance mm : +- 0.25	Tolerance mm : +- 0.50 Rated speed rpm : 1300
Tolerance mm : +- 0.25 +	kated speed rpm : 1500

Tolerance 1/min : +- 15	Rated speed rpm : 550 Pressure hPa : - rack travel mm : 9.10 Tolerance mm : +- 0.20
LOW IDLE	MEASUREMENT
control lever position degree : 70.0 tolerance degree : +- 4.0	Rated speed rpm : 1050 Pressure hPa : 670 rack travel mm : 11.00 Tolerance mm : +- 0.05
Setting point w/out bumper spring	
Rated speed rpm : 200	Pressure hPa : 600 rack travel mm : 10.50 Tolerance mm : +- 0.20
CRT mm min. $: > 6.50$	
Testing:	Start interlock
Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : +- 0.10	Rated speed rpm : > 100 Rated speed rpm : < 220
Rated speed rpm : 400	Check speed 1/min :> 80 Check
TORQUE CONTROL Rated speed rpm : 1050 rack travel mm : 12.30 Tolerance mm : + 0.05	speed 1/min : < 240
Rated speed rpm : 500 rack travel mm : 10.10 Tolerance mm : + 0.10	Aneroid pressure hPa : 1550 Rated speed rpm : 500 Del. quantity
Rated speed rpm : 800 rack travel mm : 11.60 Tolerance mm : + 0.10	cm3/1000 strokes : 288.0 Tolerance cm3/1000 strokes : +- 3.0
Rated speed rpm : 950	Check tolerance
rack travel mm : 12.20 + Tolerance mm : + 0.10	cm3/1000s. : +- 6.0
rack travel mm : 12.20	Aneroid pressure hPa : 1550 Rated speed rpm : 800 Del. quantity
rack travel mm : 12.20 Tolerance mm : + 0.10 Rated speed rpm : 600 rack travel mm : 10.20 Tolerance mm : + 0.10	Aneroid pressure hPa : 1550 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 301.0 Tolerance
rack travel mm : 12.20 Tolerance mm : + 0.10 Rated speed rpm : 600 rack travel mm : 10.20	Aneroid pressure hPa : 1550 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 301.0
rack travel mm : 12.20 Tolerance mm : + 0.10 Rated speed rpm : 600 rack travel mm : 10.20 Tolerance mm : + 0.10 ANEROID/ALTITUDE	Aneroid pressure hPa : 1550 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 301.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0
rack travel mm : 12.20 Tolerance mm : + 0.10 Rated speed rpm : 600 rack travel mm : 10.20 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST	Aneroid pressure hPa : 1550 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 301.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance

Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 STARTING FUEL DELIVERY Set starting CRT at K-cam. Rated speed rpm 100 : rack travel mm : 9.90 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 185.0 Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 300 5.00 Rack travel in mm : Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0

End of test specification sheet

10.0

Check tolerance cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.06.97 Test oil : ISO 4113

Combination No. : 0 402 648 702

Injection pump

Pump designation : PE8P12OA32OLS7875 EP type number : 0 412 628 881

Governor

Governer design. : RQV250...1150PA1346

Governer no. : 0 421 814 193

Cust. part No. :

Customer-spec. information Customer : DHI Motor : DV15T Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 125 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.20 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 16.00 Tolerance mm : +- 1.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.80 Tolerance mm : +- 0.05

Del. quantity	travel mm : 4.65
cm3/1000 strokes : 222.0 -	Tolerance mm : +- 0.25
Tolerance	Rated speed rpm : 1390
cm3/1000 strokes : + 1.0	guide sleeve
-	travel mm : 11.50
Check tolerance	Tolerance mm : +- 0.50
cm3/1000S. : +- 4.0	+
0	
Spreed	GUIDE SLEEVE POSITION
Tolerance	
cm3/1000 strokes : 7.0	control lever
	position degree : - 1
Check tolerance	Rated speed rpm : 1227
cm3/1000s. : 10.0	
	Rack travel in mm: 12.80
1	Tolerance mm : +- 1.30
Rated speed rpm : 250	
raced space rpm	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.60	
Tolerance mm : +- 0.10	Rated speed rpm : 1150
Del. quantity	Aneroid pressure
cm3/1000 strokes : 20.0	hPa : -
Tolerance cm3/1000 strokes : +- 3.0	Del. quantity cm3/1000 strokes : 222.0
Check tolerance	cm3/1000 strokes : 222.0 Tolerance
cm3/1000s. : +- 6.0	cm3/1000 strokes : +- 1.0
Spreed	Check tolerance
Tolerance	cm3/1000s. : +- 4.0
cm3/1000 strokes : 5.0	Spreed
Check tolerance	Tolerance
cm3/1000s. : 8.0	cm3/1000 strokes : 7.0
7	Check tolerance : 10.0
(B) SETTING OF INJECTION PUMP	- cm3/1000s. : 10.0 L
WITH GOVERNOR	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	
Poted around man : 1207	control lever
Rated speed rpm : 1207 guide sleeve	position degree : 58.0 tolerance degree : +- 4.0
travel mm : 8.92	toterance degree . +- 4.0
Tolerance mm : +- 0.15	control lever
	position degree : 122.0
Rated speed rpm : 250	tolerance degree : +- 4.0
guide sleeve	
travel mm : 1.31	RATED SPEED
Tolerance mm : +- 0.20	rack travel mm : 12.80
Rated speed rpm : 1185	Rated speed rpm : 1195 Tolerance 1/min : +- 5
guide sleeve	
travel mm : 8.60	rack travel mm : 4.00
Tolerance mm : +- 0.25	Rated speed rpm : 1295
-	Tolerance 1/min : +- 15
Rated speed rpm : 640	-
-	rack travel mm : 0.50

Tolerance mm Rated speed rpm	: +- 0.50 : 1400
LOW IDLE	
control lever position degree tolerance degree	: 85.0 : +- 4.0
control lever position degree tolerance degree	: 21.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 7.30
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 5.60 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1150 : 13.80 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 650 : 13.80 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 13.80 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 8.10 : +- 0.20
MEASUREMENT	

Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 350 : 10.00 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 735 : 12.10 : + 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 165 : < 190
Check	: > 155
speed 1/min Check	
speed 1/min Check speed 1/min	: < 210
Check	: - : 650 : 241.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	193.0
Tolerance cm3/1000 strokes	: +-	20.0
Check tolerance cm3/1000s.	: +-	24.0

LOW IDLE

Rated speed rpm	:	250	
Rack travel in mm Tolerance mm Del. quantity	: +-	5.60 0.10	
744000	:	20.0	
cm3/1000 strokes Check tolerance	: +-	3.0	
cm3/1000s. Spreed	: +-	6.0	
Tolerance cm3/1000 strokes Check tolerance	:	5.0	
cm3/1000S.	:	8.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.06.97 Edition Test oil : ISO 4113

Combination No. : 0 402 648 703

Injection pump

Pump designation : PE8P120A320L87880 EP type number : 0 412 628 889

Governor

Governer design. : RQV350...1050PA1352

Governer no. : 0 421 814 197

Cust. part No. : 0270747202

Customer-spec. information Customer : MB-NFZ

Motor : OM442 LA euromot

: 405.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

: 1 417 413 077 Overflow valve

Inlet press. bar : 2.0 Tolerance bar : +- 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 : +- 1.5 Tolerance bar

: 1 680 750 075 Test lines

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 4.75 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50

Tolerance mm : + 0.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

	1
Rack travel in mm : 15.00	Rated speed rpm : 580
Tolerance mm : +- 0.05	+ guide sleeve
	+ travel mm : 3.62
Del. quantity	+ Tolerance mm : + 0.25
cm3/1000 strokes : 282.0	+
	+ Rated speed rpm : 1204
Tolerance	+ guide sleeve
cm3/1000 strokes : + 1.0	† travel mm : 10.00
	Tolerance mm : +- 0.25
Check tolerance	Data de procede processo de 1700
cm3/1000s. : +- 4.0	+ Rated speed rpm : 1300
Spreed	+ guide sleeve + travel mm : 11.50
spr eed	+ Tolerance mm : +- 0.50
Tolerance	Total arice iiiii
cm3/1000 strokes : 6.0	
	+ GUIDE SLEEVE POSITION
Check tolerance	+
cm3/1000s. : 9.0	+
	+ control lever
	position degree : - 1
Rated speed rpm : 350	Rated speed rpm : 1154
Rated Speed Phil . 330	Rack travel in mm : 14.00
Rack travel in mm: 5.70	Tolerance mm : +- 1.30
Tolerance mm : +- 0.10	1 10(e) ance min 1. 1.30
Del. quantity	
cm3/1000 strokes : 19.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+
cm3/1000 strokes : +- 3.0	+ Rated speed rpm : 1050
Check tolerance	+ Aneroid pressure
cm3/1000s. : + 6.0	+ hPa : 1300
Spreed	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 282.0
cm3/1000 strokes : 6.0	+ Tolerance + cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : 10.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
cm3/1000s. : 10.0	+ cm3/1000s. : +- 4.0
	Spreed
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : 6.0
	+ Check tolerance
	+ cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	+
~	+
Rated speed rpm : 1110	COLUTON LEVED
guide sleeve travel mm : 8.10	+ CONTROL LEVER
	† control loven
Tolerance mm : +- 0.15	control lever position degree : 119.0
Rated speed rpm : 350	tolerance degree : +- 4.0
guide sleeve	+ cotton and acgree
travel mm : 1.48	A RATED SPEED
Tolerance mm : +- 0.20	rack travel mm : 14.00
	Rated speed rpm : 1098
Rated speed rpm : 900	Tolerance 1/min : +- 8
guide sleeve	+
travel mm : 5.69	rack travel mm : 4.00
Tolerance mm : +- 0.25	+ Rated speed rpm : 1180

Tolerance 1/min	: +- 15	+	
rack travel mm Tolerance mm Rated speed rpm	: 0.75 : +- 0.75 : 1250	Start interlock Rated speed rpm Rated speed rpm	
LOW IDLE		Check speed 1/min Check	
control lever position degree tolerance degree		speed 1/min FUEL DELIVERY CHA	: < 290 ARACTERISTICS
Setting point w/c	out bumper spring	Aneroid pressure	47
Rated speed rpm	: 250	hPa Rated speed rpm	: 1300 : 600
CRT mm min.	: > 7.50	Del. quantity cm3/1090 strokes Tolerance	: 298.5
Testing:		cm3/1000 strokes Check tolerance	: +- 2.0
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.70 : +- 0.10	cm3/1000s. Spreed Tolerance	: +- 5.0
Rated speed rpm	: 400	cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0 : 12.0
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	: 15.00 : +- 0.05	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 132.0
ANEROID/ALTITUDE COMPENSATOR TEST		Spreed Tolerance cm3/1000 strokes Check tolerance	: 8.0
SETTING	500	- cm3/1000s.	: 12.0
Rated speed rpm Pressure hPa	: 500 : –	REDUCED QUANTITY	
MEASUREMENT		Aneroid pressure	: 1300
Pressure hPa rack travel mm Tolerance mm	: 500 : 1.40 : +- 0.05	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1050
Pressure hPa rack travel mm Tolerance mm	: 1000 : 6.00 : +- 0.20	cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.0 : +- 5.0

STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 280.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm 350

Rack travel in mm : 5.70 Tolerance mm 0.10

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes 3.0

Check tolerance

cm3/1000s. 6.0 Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 04,06,97

Test oil

: ISO 4113

Combination No. : 0 402 648 704

Injection pump

Pump designation : PE8P120A320LS7899 EP type number : 0 412 628 916

Governor

Governer design. : RQV350...1050PA1353

Governer no. : 0 421 814 198

Cust. part No. : 0270742502

Customer-spec. information

Customer : MB-NFZ

Motor

: CM442 LA euromot

Power KW

: 405.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +-2.0

Overflow valve : 1 417 413 077

Inlet press. bar :

2.0

Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 90

Tolerance l/h : +- 10.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

B27

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

3.0

x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

4.75 Prestroke mm Prestroke mm : 4.75 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50

: +- 0.50 Tolerance mm

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

: +- 0.10 Tolerance

Check

tolerance *NW : +- 0.75

Barrel no.

:

BASIC SETTING

Rated speed rpm :

1050

Rack travel in mm	• 15 00	Rated speed rpm : 580
Tolerance mm	: +- 0.05	guide sleeve
		+ travel mm : 3.62
Del. quantity	202.0	+ Tolerance mm : + 0.25
cm3/1000 strokes	: 282.0	Poted aread pro 120/
Tolerance		+ Rated speed rpm : 1204 + guide sleeve
cm3/1000 strokes	: +- 1.0	+ travel mm : 10.00
		+ Tolerance mm : +- 0.25
Check tolerance		+
cm3/1000s.	: +- 4.0	Rated speed rpm : 1300
Spreed		+ guide sleeve + travel mm : 11.50
op. cca		+ Tolerance mm : +- 0.50
Tolerance		+
cm3/1000 strokes	: 6.0	
Check tolerance		+ GUIDE SLEEVE POSITION
cm3/1000s.	: 9,0	I
		- control lever
		position degree : - 1
	750	+ Rated speed rpm : 1154
Rated speed rpm	: 350	Rack travel in mm : 14.00
Rack travel in mm	: 5.70	+ Tolerance mm : +- 1.30
Tolerance mm	: +- 0.10	+
Del. quantity		
cm3/1000 strokes	: 19.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: +- 3.0	Rated speed rpm : 1050
Check tolerance	. +- 5.6	+ Aneroid pressure
cm3/1000s.	: +- 6.0	+ hPa : 1300
Spreed		+ Del. quantity
Tolerance	4.0	+ cm3/1000 strokes : 282.0
cm3/1000 strokes Check tolerance	: 6.0	+ Tolerance + cm3/1000 strokes : 1.0
cm3/1000s.	: 10.0	Check tolerance
	. ,0.0	+ cm3/1000s. : +- 4.0
		+ Spreed
(B) SETTING OF IN	JECTION PUMP	+ Tolerance
WITH GOVERNOR		+ cm3/1000 strokes : 6.0
		+ Check tolerance + cm3/1000s. : 9.0
GUIDE SLEEVE TRAVI	EL	+
		+
Rated speed rpm	: 1110	CONTROL LEVES
guide sleeve travel mm	: 8.10	CONTROL LEVER
Tolerance mm	: +- 0.15	- control lever
TOTO: alloo min		position degree : 119.0
Rated speed rpm	: 350	tolerance degree : +- 4.0
guide sleeve	4.40	1
travel mm Tolerance mm	: 1.48 : +- 0.20	+ RATED SPEED + rack travel mm : 14.00
יטנפי מוונפ יוווו	0.20	Rated speed rpm : 1098
Rated speed rpm	: 900	+ Tolerance 1/min : +- 8
guide sleeve		+
travel mm		
Tolerance mm	: 5.69 : +- 0.25	+ rack travel mm : 4.00 + Rated speed rpm : 1180

Tolerance 1/min	: +- 15	†
rack travel mm Tolerance mm	: +- 0.75	Start interlock
Rated speed rpm	: 1250	Rated speed rpm : > 210 Rated speed rpm : < 270
		Check
LOW IDLE		+ speed 1/min : > 190 + Check
		speed 1/min : < 290
control lever	(7.0	
position degree tolerance degree	: 67.U : +- 4.0	FUEL DELIVERY CHARACTERISTICS
Setting point w/d	out bumper spring	Aneroid pressure hPa : 1300
Rated speed rpm	: 250	+ Rated speed rpm : 600
CRT mm min.	: > 7.50	+ Del. quantity + cm3/1000 strokes : 300.0
Testing:		+ Tolerance + cm3/1000 strokes : +- 3.0
Rated speed rpm	• 350	+ Check tolerance + cm3/1000s. : +- 6.0
rack travel mm		+ Spreed
Tolerance mm		+ Tolerance
Rated speed rpm	: 400	+ cm3/1000 strokes : 8.0 + Check tolerance
Maced Speed I pill	. 400	cm3/1000s. : 12.0
TORQUE CONTROL		Ţ <u></u>
Rated speed rpm		+ Ameroid pressure
rack travel mm Tolerance mm		+ hPa : - + Rated speed rpm : 500
rocerance man	. +- 0.03	+ Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 132.0
rack travel mm Tolerance mm	: 15.00 : +- 0.10	+ Tolerance + cm3/1000 strokes : +- 1.0
TO COT GLICE THIS	0.10	Check tolerance
ANEROTO /AL TITLE		- + cm3/1000s. : +- 4.0
ANEROID/ALTITUDE COMPENSATOR TEST		+ Spreed + Tolerance
CONTENDATOR TEOT		+ cm3/1000 strokes : 8.0
CETTING		+ Check tolerance
SETTING		+ cm3/1000s. : 12.0
Rated speed rpm	: 500	
Pressure hPa	: -	+ REDUCED QUANTITY
MEASUREMENT		Aneroid pressure
Pressure hPa	: 500	+ hPa : 1300 + Rated speed rpm : 1050
rack travel mm	: 1.40	+ Del. quantity
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : 225.0
Pressure hPa	: 1000	+ Tolerance + cm3/1000 strokes : +- 2.0
rack travel mm	: 6.00	+ Check tolerance
Tolerance mm	: +- 0.20	+ cm3/1000s. : +- 5.0

STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 280.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

350 Rated speed rpm :

Rack travel in mm : 5.70 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance cm3/1000s.

10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.06.97 Test oil : ISO 4113

Combination No. : 0 402 676 839

Injection pump

Pump designation : PE6P120A320LS7898 EP type number : 0 412 626 957

Governor

Governer design. : RSV350...850P0A683

Governer no. : 0 421 833 602

Cust. part No. : 0280743102

Customer—spec. information
Customer : MB-NFZ
Motor : 0M441 A
Power KW : 165.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 130 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 850

40.70	†
Rack travel in mm : 12.70 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 191.0	Rated speed rpm : 850 Aneroid pressure
Tolerance cm3/1000 strokes : +- 1.0	+ hPa : 1000 + Del. quantity + cm3/1000 strokes : 191.0
Check tolerance	Tolerance + cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 4.0 Spreed	+ Check tolerance + cm3/1000s. : +- 4.0 + Spreed
	+ Tolerance
Tolerance cm3/1000 strokes : 6.0	+ cm3/1000 strokes : 6.0 + Check tolerance
Check tolerance cm3/1000s. : 10.0	+ cm3/1000s. : 10.0
	CONTROL LEVER
Rated speed rpm : 350	t control lever
Matter specta i piii i oss	position degree : 87.0
Rack travel in mm : 5.10 Tolerance mm : +- 0.10	tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 19.0 Tolerance	ASSEMBLY GOVERNOR SETTING
cm3/1000 strokes : +- 3.0 Check tolerance	Rated speed rpm : 875 rack travel mm : 11.70
cm3/1000s. : +- 6.0 Spreed	+ Rated speed rpm : 940
Tolerance	+ Tolerance 1/min : +- 4
cm3/1000 strokes : 8.0	rack travel mm : 4.00
Check tolerance cm3/1000s. : 12.0	† rack travel mm : 0.85
	Tolerance mm : +- 0.55
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Rated speed rpm : 1300
WITH GOACHHOL	Rated speed rpm : 876
	rack travel mm : 11.70
GUIDE SLEEVE POSITION	Rated speed rpm : 941
	+ Tolerance 1/min : +- 4
control lever	+ rack travel mm : 4.00
position degree : - 3	rack travel mm : 0.85
Rated speed rpm : 800	+ Tolerance mm : +- 0.55 + Rated speed rpm : 1300
Rack travel in mm: 0.50	+ Rated speed rpm : 1300
Tolerance mm : +- 0.20	h Datad analysis 227
governor spring pre-tension	+ Rated speed rpm : 877 + rack travel mm : 11.70
click setting x : 4.00	Rated speed rpm : 942
-	Tolerance 1/min : +- 4 rack travel mm : 4.00

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300
Rated speed rpm rack travel mm	
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 879
rack travel mm	: 11.70
Rated speed rpm	: 944
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300
Rated speed rpm rack travel mm	
Rated speed rpm	: 945
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1300
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350 rack travel mm : 5.10 Tolerance mm : + 0.10

rack travel mm : 2.00 Rated speed rpm : 415

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 12.70 Tolerance mm : + 0.05

Rated speed rpm : 600 rack travel mm : 12.70 Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.70
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 11.00
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : -

Pressure hPa : 450 rack travel mm : 11.90 Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 193.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 145.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000 strokes : +- 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000 strokes : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	Tolerance cm3/1000 strokes Check tolerance	:		8.0)	
### ### ### ### ### ### ### ### ### ##		:		12.0)	
Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 145.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 14.0 LOW IDLE Rated speed rpm : 5.10 Tolerance mm : 5.10 Tolerance mm : 5.10 Tolerance mm : 40.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000 strokes : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	•	•				
cm3/1000 strokes : 145.0 Tolerance : 4.0 Check tolerance : + 4.0 Spreed Tolerance Tolerance : 8.0 Check tolerance : 8.0 Check tolerance : 12.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000 strokes : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0	Rated speed rpm	:		500		
<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000 strokes : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance</pre>	cm3/1000 strokes	:		145.0	ס	
<pre>cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance</pre>	cm3/1000 strokes	:	+-	1.0	כ	
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	cm3/1000s.	:	+-	4.0)	
Cm3/1000s. : 12.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	cm3/1000 strokes	:		8.0)	
Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance		:		12.0)	
Rated speed rpm : 100 rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance						
rack travel mm : 14.50 Del. quantity cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	STARTING FUEL DELI	[VI	ERY			
<pre>cm3/1000 strokes : 190.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance</pre>	rack travel mm	:		-)	
cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	cm3/1000 strokes	:		190.0	כ	
cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	cm3/1000 strokes	:	+-	10.0)	
Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance		:	+	14.0	כ	
Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance						
Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	LOW IDLE					
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	Rated speed rpm	:		350		
cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	Tolerance mm	:	+			
cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000S. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	cm3/1000 strokes	:		19.0)	
cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	cm3/1000 strokes	:	+-	3.0)	
cm3/1000 strokes : 8.0 Check tolerance	cm3/1000s. Spreed	:	+-	6.0)	
	cm3/1000 strokes	:		8.0)	
		:		12.0)	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.04.97 : ISO 4113

Combination No. : 0 402 698 033F4

Injection pump

Pump designation : PE8H120/320LS15 EP type number : 0 412 628 003

Governor

Governer design. : RE36 (FD 66322 - FD

: 76319)

Governer no.

: 0 421 890 369

Cust. part No. : 0250745602

Customer-spec. information Customer

: MB-NFZ

Motor

: OM 442 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Inlet press. bar :

Tolerance bar : +- 0.1

3.0

Overflow valve : 2 417 413 082

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

C07

x inside diameter : 3.0

x length mm :

600

REMARKS

Pump-specific values in Section (B)

must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm 7.00 : +- 0.05

Tolerance mm Check

tolerance mm : - 0.10

Rack travel in mm : 10.50

Tolerance mm

: +- 0.50

Firing order

: 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no.

: 8

(B) POSITIONER TESTING ENGINE-SPEED SENSOR Warm-up time: 3 minutes at (All P and R pumps not n=600 min-1, Uact = 2.5 VH and M pumps) Test with control rod TESTING & SETTING RACK TRAVEL SENSOR in stop position POSITION Engine speed min-1: 60 Amplitude V : 1.4 Engine speed min-1: Tolerance V : +/- 0.6 Setting point Check (P, R and H pump) tolerance V : +/- 1.20 3.100 Uact V Engine speed min-1: 600 13.00 CRT mm Difference Tolerance mm : +/- 0.05 Amplitude to Check Amplitude V : max.1.4 : +/- 0.10 tolerance mm Check value (P, R ar:d H pump) (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 1,700 Uact V CRT mm 6.15 750 Rated speed rpm : +/- 0.25 Tolerance mm Uact V 2.800 Check Prestroke solenoid tolerance mm : ± -0.30 Stroke mm 7.40 Del. quantity cm3/1000 strokes : 342.0 Setting point Tolerance (M pump) cm3/1000 strokes : +-2.0 Check tolerance Uact V 3.100 cm3/1000s. : +-6.0 12.50 CRT mm Spreed Tolerance mm : +/- 0.05Tolerance cm3/1000 strokes : 5.0 Check : +/- 0.10 tolerance mm Check tolerance cm3/1000s. 9.0 Check value FUEL DELIVERY CHARACTERISTICS (M pump) 1.700 950 Uact V Rated speed rpm CRT mm 5.50 Uact V 2.900 : +/- 0.25 Tolerance mm Prestroke solenoid 8.00 Check Stroke mm Del. quantity cm3/1000 strokes : : +/- 0.30 tolerance mm 329.0 Stop position Tolerance cm3/1000 strokes : +-3.0 : Value with Check tolerance Uact V deenergised adjusting magnet cm3/1000s.: +--6.0 and control rod in stop position. CRT mm 0.75 Rated speed rpm : 550 Tolerance mm : +/- 0.25 Uact V 2.700 Check Prestroke solenoid

9.50

Stroke mm

c08

tolerance mm

: +/- 0.35

Del. quantity				
cm3/1000 strokes	:		349.0	
Tolerance cm3/1000 strokes	•	+-	3.0	
Check tolerance	•	•	5.0	
cm3/1000s.	:	+-	6.0	
				
Rated speed rpm	:		630	
Uact V	:		2.000	
Prestroke solenoid Stroke mm	.		5.30	
Del. quantity	•		J. 30	
cm3/1000 strokes	:		203.0	
Tolerance cm3/1000 strokes			2.5	
Check tolerance	•	T-	د. ي	
cm3/1000s.	:	+-	5.0	
TECT BOTHE ! 4				
TEST POINT L1				
Rated speed rpm	:		300	
Uact V	:		1.500	
Tolerance Volt Check tolerance	:	+-	0.060	
Volt	:	+-	0.060	
Prestroke solenoid	į.		0.000	
Stroke mm	:		8.00	
Del. quantity cm3/1000 strokes			31.0	
Tolerance	•		31.0	
cm3/1000 strokes	:	+-	3.0	
Spreed				
Tolerance			0.0	
cm3/1000 strokes Check tolerance	:		8.0	
cm3/1000s.	:		12.0	
STARTING FUEL DELI	T1/	EDV		
STARTING FUEL DELI	LVI	_K I		
Rated speed rpm	:		100	
Uact V Drastoska salamaia	;		1.900	
Prestroke solenoid Stroke mm			10.00	
Del. quantity	•		10.00	
cm3/1000 strokes	:		108.0	
Tolerance		,	40.0	
cm3/1000 strokes	:	+-	10.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.06.97 Test oil : ISO 4113

Combination No. : 0 402 746 603

Injection pump

Pump designation : PES6P120A320RS7359

EP type number : 0 412 726 925

Governor

Governer design. : RQ300/1050PA999-7

Governer no. : 0 421 801 799

Cust. part No. : CCEP 5153 66-224

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIHR062045 A41

Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. $^{\circ}$ C : 40 Tolerance $^{\circ}$ C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

Part DIVO

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.70 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.25 Tolerance mm : +- 0.75

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance 'NW : +- 0.75

Start of delivery mark

*NW after s.o.d. : -0.50

Tolerance : +- 0.50

Check

tolerance $^{\circ}NW$: \leftarrow 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 12.40 Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm	: 600	Rated speed rpm : 594
Tolerance mm	: +- 0.05	guide sleeve
Del. quantity cm3/1000 strokes	: 197.0	travel mm : 5.11 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 720 guide sleeve travel mm : 6.00
Check tolerance		Tolerance mm : +- 0.10
cm3/1000s.	: +- 4.0	Rated speed rpm : 1380 guide sleeve
Spreed		travel mm : 11.50 Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes	: 5.0	
Check tolerance		GUIDE SLEEVE POSITION
cm3/1000s.	: 9.0	control lever
		position degree : 109 Rated speed rpm : 800
Rated speed rpm	: 275	Rack travel in mm : 20.00
Rack travel in mm Tolerance mm Del. quantity		Tolerance mm : +- 0.80
cm3/1000 strokes Tolerance	: 36.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes Check tolerance	: + 2.0	Rated speed rpm : 600 Aneroid pressure
cm3/1000s. Spreed	: ← 5.0	hPa : 1000 Del. quantity
Tolerance cm3/1000 strokes	: 8.0	cm3/1000 strokes : 197.0 Tolerance
Check tolerance cm3/1000s.	: 12.0	cm3/1000 strokes : +- 1.0 Check tolerance
CIID7 10005.	12.0	cm3/1000s. : +- 4.0 Spreed
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	Tolerance cm3/1000 strokes : 5.0
	+	Check tolerance cm3/1000s. : 9.0
GUIDE SLEEVE TRAV	EL	
Rated speed rpm guide sleeve	: 1145	CONTROL LEVER
travel mm	: 6.55	
Tolerance mm	: +- 0.15	control lever position degree : 276.0
Rated speed rpm guide sleeve	: 275	tolerance degree : +- 4.0
travel mm Tolerance mm	: 1.75 : +- 0.20	RATED SPEED rack travel mm : −1.00
	+	Rated speed rpm : 1130
Rated speed rpm guide sleeve	+	Tolerance 1/min : +- 15
travel mm Tolerance mm	: 6.00 : + 0.10	rack travel mm : -8.40 Rated speed rpm : 1260
. 0 ; 0 ; 31 ; 00 iinii	,	

Tolerance 1/min : +- 5 rack travel mm : -11.90 Tolerance mm : +- 0.50 Rated speed rpm : 1375 LOW IDLE control lever position degree : 254.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 175 CRT mm min. : < -4.80Testing: Rated speed rpm : 275 rack travel mm : -6.70 Tolerance mm : → 0.10 rack travel mm : -10.40 Rated speed rpm : 465 Tolerance 1/min : + 20 TORQUE CONTROL Rated speed rpm : 600 Tolerance mm : +~ 0.05 Rated speed rpm : 1050 Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1000 Rated speed rpm : 500 Pressure hPa : -1.75 Tolerance mm : +- 0.20 **MEASUREMENT** Rated speed rpm : 500 Pressure hPa : 220

Tolerance mm : +- 0.15 Pressure hPa : 160 rack travel mm : -1.25 Tolerance mm : +- 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 195 Check speed 1/min :> 80 Check speed 1/min : < 215 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 1000 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 198.0 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 153.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 150.0 Tolerance cm3/1000 strokes : + 15.0Check tolerance cm3/1000s. : **←** 19.0 LOW IDLE

rack travel mm : -0.85

Rated speed rpm	:	275
Rack travel in mm Tolerance mm Del. quantity	: : +-	-6.70 0.10
cm3/1000 strokes	:	36.0
Tolerance cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000S. Spreed	: +-	5.0
Tolerance cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.06.97 : ISO 4113 Test oil

Combination No. : 0 402 746 634

Injection pump

Pump designation : PES6P12CA72OLS7262

: -1

EP type number : 0 412 726 918

Governor

Governer design. : RQV350...950PA1348

Governer no. : 0 421 814 196

Cust. part No. : 0240746302

Customer-spec. information

Customer : MTU

: 6R183-02 Motor Power KW : 305.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

: 40 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 170 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm: : 4.05 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 6-2-4-1-5-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +~ 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.20

c14

Tolerance mm : +- 0.05	+ guide sleeve + travel mm : 11.50
Del. quantity cm3/1000 strokes : 298.0	Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes : + 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : + 4.0	control lever position degree : - 1 Rated speed rpm : 1069
Spreed	+
Tolerance cm3/1000 strokes : 5.0	Rack travel in mm : 12.20 Tolerance mm : +- 1.30
Check tolerance cm3/1000s. 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
	+ Rated speed rpm : 950 + Aneroid pressure
Rated speed rpm : 350	+ hPa : 1400 + Del. quantity
Rack travel in mm : 5.10	+ cm3/100C strokes : 298.0 + Tolerance
Tolerance mm : +- 0.10 Del. quantity	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : 21.0 Tolerance	cm3/1000s. : +- 4.0 + Spreed
cm3/1000 strokes : +- 3.0 Check tolerance	Tolerance cm3/1000 strokes : 5.0
cm3/1000s. : +- 6.0 Spreed	Check tolerance + cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : 8.0	‡
Check tolerance cm3/1000s. : 12.0	CONTROL LEVER
	+
(B) SETTING OF INJECTION PUMP	+ control lever + position degree : 119.0
WITH GOVERNOR	+ tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
	rack travel mm : 12.20 Rated speed rpm : 995
Rated speed rpm : 1008 guide sleeve	+ Tolerance 1/min : +- 5 +
guide sleeve travel mm : 8.39 Tolerance mm : +- 0.15	rack travel mm : 4.00 Rated speed rpm : 1085
Rated speed rpm : 350	Tolerance 1/min : +- 15
guide steeve	rack travel mm : 0.50
guide steeve travel mm : 2.02 Tolerance mm : +- 0.20	Tolerance mm : +- 0.50 Rated speed rpm : 1250
Rated speed rpm : 486	<u> </u>
<pre>guide sleeve travel mm : 3.45 Tolerance mm : +- 0.25</pre>	I OU TOLE
	+ LOW IDLE
Rated speed rpm : 1220	+

control lever position degree tolerance degree	: 68.0 : +- 4.0
Setting point w/ou	ut bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 7.40
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.10 : ← 0.10
Rated speed rpm	: 375
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 950 : 13.20 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.20 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1400 : 13.20 : +- 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 7.80 : +- 0.15
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 400 : 8.85 : +- 0.05
Pressure hPa	: 850 : 11.25

Rated speed rpm	: < 270
Check speed 1/min	: > 220
Check	. /
speed 1/min	: < 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa	: 1400
Rated speed rpm Del. quantity	: 750
cm3/1000 strokes	: 301.0
Tolerance	
cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: +- 5.0
Spreed	· '- J.U
Tolerance	
	: 10.0
Check tolerance cm3/1000s.	: 14.0
Calest 1000s.	. 14.0
Aneroid pressure	
hPa	: -
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 132.5
Tolerance	. , , , , , , , , , , , , , , , , , , ,
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000s. Spreed	: +- 4.0
Tolerance	
cm3/1000 strokes	: 10.0
Check tolerance	4/ 0
cm3/1000s.	: 14.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
rack travel mm	: 15.00
Tolerance mm	: +- 0.20
Del. quantity cm3/1000 strokes	: 340.0
Tolerance	. 540.0
cm3/1000 strokes	: +- 18.0
Check tolerance cm3/1000s.	: +- 24.0

Rated speed rpm : > 240

LOW IDLE

Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 21.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.06.97 Test oil : ISO 4113

Combination No. : 0 402 776 840

Injection pump

Pump designation : PESCP120A720L37440 EP type number : 0 412 726 971

Governor

Governer design. : RSV350...750P0A520

: -1

Governer no. : 0 421 833 262

Cust. part No. : 0270749602

Customer-spec. information
Customer : MB-NFZ
Motor : 0M447 A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 225 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.00 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.50

Firing order : _6- 2- 4- 1- 5-

: 3

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance $^{\circ}NW$: \leftarrow 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.00

c18

Tolerance mm : → 0.05	+ Rated speed rpm : 700 + Aneroid pressure
Del. quantity cm3/1000 strokes : 230.0	+ hPa : - - Del. quantity
	+ cm3/1000 strokes : 230.0
Tolerance cm3/1000 strokes : +- 1.0	+ Tolerance + cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : +- 4.0	+ Check tolerance + cm3/1000s. : +- 4.0
cm3/10005. : +- 4.0	+ Spreed + Tolerance
Spreed	cm3/1000 strokes : 5.0 Check tolerance
Tolerance	- cm3/1000s. : 9.0
cm3/1000 strokes : 5.0	
Check tolerance cm3/1000s. : 9.0	CONTROL LEVER
	+
	- control lever
Dated aread page + 750	+ position degree : 77.0
Rated speed rpm : 350	tolerance degree : +- 4.0
Rack travel in mm : 5.30	1
Tolerance mm : + 0.10	ASSEMBLY GOVERNOR SETTING
Del. quantity	+
cni3/1000 strokes : 17.0	Rated speed rom : 750
Tolerance cm3/1000 strokes : +- 3.0	rack travel mm : 14.00
Check tolerance	Rated speed rpm : 785
cm3/1000s. : +- 6.0	Tolerance 1/min : + 4
Spreed	rack travel mm : 4.00
Toler ance	+
cm3/1000 strokes : 8.0 Check tolerance	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55
cm3/1000s. : 12.0	+ Tolerance mm : + 0.55 + Rated speed rpm : 850
(1000)	Hatta speed (piii . oso
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 751
WITH GOVERNOR	rack travel mm : 14.00
	}
	+ Rated speed rpm : 786
CHIPE SIFFUE DOCUTION	Tolerance 1/min : + 4
GUIDE SLEEVE POSITION	+ rack travel mm : 4.00
	rack travel mm : 0.85
control lever	Tolerance mm : + 0.55
position degree : - 3	Tolerance mm : +- 0.55 Rated speed rpm : 850
Rated speed rpm : 800	+
Rack travel in mm: 0.50	+ Rated speed rpm : 752
Tolerance mm : +- 0.20	rack travel mm : 732
TOTO WITE IN THE STATE OF CO.	17.00
governor spring	Rated speed rpm : 787
pre-tension	Tolerance 1/min : +- 4
click setting x : 0.75	+ rack travel mm : 4.00
	t nack travel mm · 0.95
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 850
TOLE COMP PEETVENT AT TOLE COMP OTO	Rated speed rpm : 850
	1

Rated speed rpm	: 753
rack travel mm	: 14.00
Rated speed rpm	: 788
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 754
rack travel mm	: 14.00
Rated speed rpm Tolerance 1/min rack travel mm	
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 850
Rated speed rpm	: 755
rack travel mm	: 14.00
Rated speed rpm	: 790
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 850
LOW IDLE	
control lever position degree tolerance degree	: 62.0 : + 4.0
Testing:	
Rated speed rpm	: 350
rack travel mm	: 5.30
Tolerance mm	: +- 0.10
rack travel mm Rated speed rpm Tolerance 1/min	
SET IDLE AUXILIAR	Y SPRING
Rated speed rpm	: 100
rack travel mm	: 2.00

TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.00 : +- 0.05		
STARTING FUEL DELI			
Rated speed rpm rack travel mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.			
LOW IDLE	. 750		
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 5.30 : +- 0.10		
End of test specification sheet			

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition Test oil : ISO 4113

: 07.11.96

Combination No. : 0 402 946 014

Injection pump

Pump designation : PES6P120A720LS8037

EP type number : 0 412 926 024

Governor

Governer design. : RQV250...1050PA1236K

Governer no. : 0 421 815 970

Cust. part No. : 1370101

Customer-spec. information Customer : SCANIA

: DSC1202 Motor

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 85 Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.40 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : ← 0.75

Start of delivery blocking

*NW after s.o.d. : 180.00

Tolerance : +- 0.50 Check

tolerance °NW : +- 0.75

Barrel no. :

BASIC SETTING

		Tolerance mm : +- 0.25
Rack travel in mm Tolerance mm		Rated speed rpm : 290 guide sleeve
	<u> </u>	travel mm : 2.62
Del. quantity cm3/1000 strokes	: 330.0	Tolerance mm : +- 0.25
- 1		Rated speed rpm : 1310
Tolerance cm3/1000 strokes	: +- 1.0	guide sleeve travel mm : 13.50
CIIIDA TODO STUCKES	· - 1.0	Tolerance mm : +- 0.50
Check tolerance		
	: + 10.0 }	
		GUIDE SLEEVE POSITION
Spreed	†	
Tolerance	†	control lever
cm3/1000 strokes	. 80	position degree : - 1
CIII TOUG SET ORES	. 0.0	Rated speed rpm : 1170
Check tolerance	+	
	: 14.0	Rack travel in mm : 12.10
		Tolerance mm : +- 1.30
	+	
Dashard are and usus	. 250	FULL LOAD DELTUEDY AT SULL LOAD GTOD
Rated speed rpm	: 250	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 4.60	Rated speed rpm : 775
	: + 0.30	Aneroid pressure
Del. quantity	1	hPa : 1500
cm3/1000 strokes	: 19.0	Del. quantity
Tolerance	4	cm3/1000 strokes : 330.0
cm3/1000 strokes	; 3.0	Tolerance
Check tolerance	+	cm3/1000 strokes : +- 1.0
	: +- 6.0 +	Check tolerance
Spreed	†	cm3/1000s. : +- 10.0
Tolerance	· / a †	Spreed
cm3/1000 strokes Check tolerance	: 4.0	Tolerance cm3/1000 strokes : 8.0
cm3/1000s.	: 8.0	Check tolerance
CIII 7 10000 .	· 3.3	cm3/1000s. : 14.0
	1	
(B) SETTING OF INJ	ECTION PUMP	
WITH GOVERNOR	+	
	ŧ	CONTROL LEVER
CUZDE OLEEVE TOAVE		
GUIDE SLEEVE TRAVE	<u> </u>	control lever position degree : 63.0
Rated speed rpm	: 1116	position degree : 63.0 tolerance degree : +- 4.0
guide sleeve	· ''''	toterance degree : '- 4.0
travel mm	: 10.09	control lever
	: + 0.15 +	position degree : 121.0
	}	tolerance degree : +- 4.0
The second secon	: 250	
guide sleeve	<u> </u>	RATED SPEED
travel mm	: 1.79	rack travel mm : 12.10
Tolerance mm	: +- 0.20	Rated speed rpm : 1095
Ond-14	. 4//	Tolerance 1/min : +- 5
	: 644	Check speed 1/min : +- 10
guide sleeve travel mm	: 4.47	5 Specu (/ III 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
CLOVE CHAIR	·	

rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min rack travel mm Tolerance mm Rated speed rpm	: +- 20 : 0.50 : +- 0.50	++++++++++
LOW IDLE		+++++++++++++++++++++++++++++++++++++++
control lever position degree tolerance degree control lever	: 75.0 : +- 4.0	+ + + + + + + + + + + + + + + + + + + +
position degree tolerance degree	: 17.0 : + 4.0	<u>†</u>
Setting point w/o	ut bumper spring	+
Rated speed rpm	: 150	Ŧ
CRT mm min.	: > 7.30	7
Testing:		+
Rated speed rpm rack travel mm Tolerance mm	: 250 : 4.60 : + 0.30	† † † †
Rated speed rpm	: 275	‡
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 775 : 14.05 : +- 0.05	† † † †
Rated speed rpm rack travel mm Tolerance mm	: 650 : 13.05 : +- 0.10	† † † †
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 13.10 : +- 0.10	+++++++++++++++++++++++++++++++++++++++
Rated speed rpm rack travel mm Tolerance mm	: 675 : 13.30 : + 0.30	T + +

ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 775 Pressure hPa : 1500 rack travel mm : 14.05 Tolerance mm : +- 0.10 Rated speed rpm : 775 Pressure hPa : - rack travel mm : 8.50 Tolerance mm : +- 0.20 MEASUREMENT Rated speed rpm : 775 Pressure hPa : 300 rack travel mm : 9.80 Tolerance mm : +- 0.15 Pressure hPa : 610 rack travel mm : 11.50 Tolerance mm : +- 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500 Rated speed rpm : 650 Rated speed rpm : 650 Rated speed rpm : 650 Rated speed rpm : 1500		
Rated speed rpm : 775 Pressure hPa : 1500 rack travel mm : 14.05 Tolerance mm : +- 0.10 Rated speed rpm : 775 Pressure hPa : - rack travel mm : 8.50 Tolerance mm : +- 0.20 MEASUREMENT Rated speed rpm : 775 Pressure hPa : 300 rack travel mm : 9.80 Tolerance mm : +- 0.15 Pressure hPa : 619 rack travel mm : 11.50 Tolerance mm : +- 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000s: +- 10.0 Aneroid pressure hPa : 1500 Aneroid pressure cm3/1000s: +- 10.0		
Pressure hPa : 1500 rack travel mm : 14.05 Tolerance mm : +- 0.10 Rated speed rpm : 775 Pressure hPa : - rack travel mm : 8.50 Tolerance mm : +- 0.20 MEASUREMENT Rated speed rpm : 775 Pressure hPa : 300 rack travel mm : 9.80 Tolerance mm : +- 0.15 Pressure hPa : 300 rack travel mm : 9.80 Tolerance mm : +- 0.15 Pressure hPa : 310 rack travel mm : 11.50 Tolerance mm : +- 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : > 170 Check speed 1/min : > 80 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s: +- 10.0	SETTING	
Pressure hPa : rack travel mm : 8.50 Tolerance mm : + 0.20 MEASUREMENT Rated speed rpm : 775 Pressure hPa : 300 rack travel mm : 9.80 Tolerance mm : + 0.15 Pressure hPa : 610 rack travel mm : 11.50 Tolerance mm : + 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s: + 10.0 Aneroid pressure hPa : 1500	Pressure hPa rack travel mm	: 1500 : 14.05
Rated speed rpm : 775 Pressure hPa : 300 rack travel mm : 9.80 Tolerance mm : + 0.15 Pressure hPa : 610 rack travel mm : 11.50 Tolerance mm : + 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500	Pressure hPa rack travel mm	: – : 8.50
Pressure hPa : 300 rack travel mm : 9.80 Tolerance mm : + 0.15 Pressure hPa : 610 rack travel mm : 11.50 Tolerance mm : + 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s. : + 10.0 Aneroid pressure hPa : 1500	MEASUREMENT	
rack travel mm : 9.80 Tolerance mm : + 0.15 Pressure hPa : 610 rack travel mm : 11.50 Tolerance mm : + 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s. : + 10.0 Aneroid pressure hPa : 1500	Rated speed rpm	: 775
rack travel mm : 11.50 Tolerance mm : + 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500	rack travel mm	: 9.80
Rated speed rpm : > 100 Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500	rack travel mm	: 11.50
Rated speed rpm : < 170 Check speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500	Start interlock	
speed 1/min : > 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500		
FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000S. : +- 10.0 Aneroid pressure hPa : 1500	speed 1/min	: > 80
Aneroid pressure hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500		: < 190
hPa : 1500 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 319.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500	FUEL DELIVERY CHA	NRACTERISTICS
cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000S. : +- 10.0 Aneroid pressure hPa : 1500	hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 650
cm3/1000s. : +- 10.0 Aneroid pressure hPa : 1500	cm3/1000 strokes	: +- 4.0
hPa : 1500		: +- 10.0
	hPa	

Del. quantity cm3/1000 strokes : 272.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 8.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 675
Del. quantity
cm3/1000 strokes : 323.0
Tolerance
cm3/1000 strokes : +- 4.0

Check tolerance cm3/1000s. : +- 10.0

Aneroid pressure
hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 192.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm: 4.60
Tolerance mm: + 0.30
Del. quantity
cm3/1000 strokes: 19.0
Tolerance

cm3/1000 strokes : + 3.0

Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 14.03.97 : ISO 4113

Combination No. : 0 402 946 015

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

Governer no. : 0 421 814 157

Cust. part No. : 1383795

Customer-spec. information : SCANIA Customer : DSC 913 Motor

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

: 40 : +- 2.0 temp. °C Tolerance °C

Overflow valve : 2 417 413 082

: 2.5 : + 0.1 Inlet press. bar : Tolerance bar

Overflow quantity

min. l/h : 105 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

: 4.00 : + 0.05 Prestroke mm Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rack travel in mm : 12.70 Tolerance mm : + 0.05	+ Rated speed rpm : 322 + guide sleeve
Del. quantity cm3/1000 strokes : 300.0	travel mm : 2.58 Tolerance mm : + 0.25
Tolerance	Rated speed rpm : 372 guide sleeve
cm3/1000 strokes : + 1.0 Check tolerance	travel mm : 3.27 Tolerance mm : +- 0.25
cm3/1000s. : + 8.0	Rated speed rpm : 470 guide sleeve
Spreed Tolerance	travel mm : 4.09 Tolerance mm : +- 0.25
cm3/1000 strokes : 8.0	Rated speed rpm : 1470 guide sleeve
Check tolerance : 12.0	travel mm : 11.50 Tolerance mm : + 0.50
Date de la constant d	GUIDE SLEEVE POSITION
Rated speed rpm : 250	I
Rack travel in mm : 7.50	+ control lever
Tolerance mm : + 0.10	+ position degree : -1
Del. quantity cm3/1000 strokes : 40.0	Rated speed rpm : 1260
Tolerance	Rack travel in mm : 11.40
cm3/1000 strokes : +- 3.0	+ Tolerance mm : + 1.50
Check tolerance	+
$cm3/1000s.$: \leftarrow 6.0	+
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 4.0	+ Rated speed rpm : 600
Check tolerance	+ Rated speed rpm : 600 + Aneroid pressure
cm3/1000s. : 8.0	+ hPa : 1500
	+ Del. quantity
	+ cm3/1000 strokes : 300.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : +- 1.0 + Check tolerance
	+ cm3/1000s. : +- 8.0
GUIDE SLEEVE TRAVEL	+ Spreed
	+ Tolerance
Rated speed rpm : 1057	+ cm3/1000 strokes : 8.0
guide sleeve travel mm : 7.89	+ Check tolerance + cm3/1000s. : 12.0
Tolerance mm : + 0.15	t cm3/1000s. : 12.0
Total alice and	1
Rated speed rpm : 250	+
guide sleeve	+ CONTROL LEVER
travel mm : 1.33	†
Tolerance mm : +- 0.20	<pre>control lever position degree : 57.0</pre>
Rated speed rpm : 748	<pre>position degree : 57.0 tolerance degree : +- 4.0</pre>
guide sleeve	+
travel mm : 6.17	- control lever
Tolerance mm : + 0.25	+ position degree : 120.0

tolerance degree : + 4.0	†
RATED SPEED rack travel mm : 11.70 Rated speed rpm : 1045 Tolerance 1/min : + 5 Check speed 1/min : + 10 rack travel mm : 4.00 Rated speed rpm : 1235 Tolerance 1/min : + 15 Check speed 1/min : + 20	ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 12.70 Tolerance mm : + 0.05 Rated speed rpm : 500 Pressure hPa : -
rack travel num : 0.50 Tolerance mum : +- 0.50 Rated speed rpm : 1350	rack travel mm : 10.80 Tolerance mm : + 0.20 MEASUREMENT Rated speed rpm : 500
LOW IDLE	Pressure hPa : 380 rack travel mm : 11.25 Tolerance mm : +- 0.15
control lever position degree : 37.0 tolerance degree : +- 4.0 control lever	+ Pressure hPa : 750 + rack travel mm : 12.15 + Tolerance mm : + 0.05
position degree : 25.0 tolerance degree : +- 4.0	Start interlock
Setting point w/out bumper spring	Rated speed rpm : < 170 Rated speed rpm : > 100
Rated speed rpm : 150 CRT mm min. :> 9.80	+ Check + speed 1/min : < 190
Testing:	Check speed 1/min :> 80
Rated speed rpm : 250 rack travel mm : 7.50 Tolerance mm : + 0.10	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 300	Aneroid pressure hPa : 1500 Rated speed rpm : 1000
TORQUE CONTROL Rated speed rpm : 600 rack travel mm : 12.70 Tolerance mm : + 0.05 Rated speed rpm : 1000 rack travel mm : 12.70	Del. quantity cm3/1000 strokes : 290.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 8.0
Tolerance mm : +- 0.10	Aneroid pressure hPa : - Rated speed rpm : 500

Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm

rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 265.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 24.0

100

LOW IDLE

Rated speed rpm : 250 Rack travel in mm : 7.50 Tolerance mm 0.10 Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 14.03.97 Edition Edition : 14.03.97 Test oil : ISO 4113

Combination No. : 0 402 946 016

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -1

: 0 421 814 158 Governer no.

Cust. part No. : 1369528

Customer-spec. information Customer : SCANIA Motor : DSC 912

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

40 temp. °C Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : ← 20.0

Test nozzle holde assembly : 1 688 901 104

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -360

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

: +- 0.75 tolerance *NW

: 1 Barrel no.

BASIC SETTING

	T
Rack travel in mm : 12.80	Rated speed rpm : 322
Tolerance mm : +- 0.05	+ guide sleeve
	+ travel mm : 2.58
Del. quantity	+ Tolerance mm : +- 0.25
cm3/1000 strokes : 292.0	+
	Rated speed rpm : 372
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 3.27
	+ Tolerance mm : +- 0.25
Check tolerance	t Detail aread are (70
cm3/1000s. : +- 9.0	+ Rated speed rpm : 470 + guide sleeve
Spreed	
Spreed	Tolerance mm : +- 0.25
Tolerance	Total differential
cm3/1000 strokes : 8.0	Rated speed rpm : 1470
	+ guide sleeve
Check tolerance	+ travel mm : 11.50
cm3/1000s. : 12.0	+ Tolerance mm : +- 0.50
	+ GUIDE SLEEVE POSITION
Rated speed rpm : 250	†
Rack travel in mm : 7.50	t control lever
	+ position degree : - 1 + Rated speed rpm : 1290
Del. quantity cm3/1000 strokes : 40.0	T Kateu speed (piii . 1290
Tolerance	T Rack travel in mm : 11.30
cm3/1000 strokes : +- 3.0	+ Tolerance mm : +- 1.50
Check tolerance	Total de limi
cm3/1000s. : +- 6.0	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+
cm3/1000 strokes : 4.0	+ Rated speed rpm : 600
Check tolerance	+ Aneroid pressure
cm3/1000s. : 8.0	+ hPa : 1500
	+ Del. quantity
	+ cm3/1000 strokes : 292.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	cm3/1000 strokes : +- 1.0
	Check tolerance
OUTDE OF FELLE TO A LET	
GUIDE SLEEVE TRAVEL	+ Spreed + Tolerance
Rated speed rpm : 1057	+ cm3/1000 strokes : 8.0
The second secon	Check tolerance
guide sleeve travel mm : 7.89	- cm3/1000s. : 12.0
Tolerance mm : +- 0.15	T (1137 10003: 12.0
roterance likil	<u> </u>
Rated speed rpm : 250	
guide sleeve	CONTROL LEVER
travel mm : 1.33	+
Tolerance mm : +- 0.20	→ control lever
	position degree : 57.0
Rated speed rpm : 748	tolerance degree : +- 4.0
guide sleeve	†
travel mm : 6.17	+ control lever
Tolerance mm : +- 0.25	+ position degree : 120.0
roterance iixii	, , , , , , , , , , , , , , , , , , , ,

tolerance degree : + 4.0 +	
RATED SPEED rack travel mm : 11.80 Rated speed rpm : 1045 Tolerance 1/min : +- 5 Check speed 1/min : +- 10 rack travel mm : 4.00 Rated speed rpm : 1225 Tolerance 1/min : +- 15 Check speed 1/min : +- 20 rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1350	ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 12.80 Tolerance mm : +- 0.05 Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.80 Tolerance mm : +- 0.20 MEASUREMENT Rated speed rpm : 500
LOW IDLE	Pressure hPa : 250 rack travel mm : 11.30
control lever position degree : 87.0 tolerance degree : + 4.0 control lever	Tolerance mm : +- 0.15 Pressure hPa : 620 rack travel mm : 12.30 Tolerance mm : +- 0.05
position degree : 25.0 + tolerance degree : + 4.0 +	Start interlock
Setting point w/out bumper spring	Rated speed rpm : > 100 Rated speed rpm : < 170
Rated speed rpm : 150	Check
CRT mm min. : > 9.70	speed 1/min :> 80 Check
Testing:	speed 1/min : < 190
Rated speed rpm : 250 + rack travel mm : 7.50 + Tolerance mm : +- 0.10 +	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 300	Aneroid pressure hPa : 1500 Rated speed rpm : 1000
TORQUE CONTROL Rated speed rpm : 600 rack travel mm : 12.80 Tolerance mm : + 0.05 Rated speed rpm : 1000 rack travel mm : 12.80 Tolerance mm : 0.05	Del. quantity cm3/1000 strokes : 282.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 9.0 Aneroid pressure hPa : - Rated speed rpm : 500
1	•

Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 260.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 24.0

LOW IDLE

250 Rated speed rpm : 7.50 Rack travel in mm : 0.10 Tolerance mm Del. quantity 40.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance 6.0 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.03.96 : 22.03.90 : ISO 4113 Test oil

Combination No. : 0 402 946 017

Injection pump

Pump designation : PES6P120A720RS8039 EP type number : 0 412 926 026

Governor

Governer design. : RQV250...950PA1243

Governer no. : 0 421 814 162

Cust. part No. : 1374808

Customer-spec. information Customer : SCANIA : DSC 11.79 Motor

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 115 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.15 : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

	L
Rack travel in mm : 11.90 - Tolerance mm : + 0.05	Rated speed rpm : 470 guide sleeve
Toterance num : += 0.05	travel mm : 4.09
Del. quantity	Tolerance mm : +- 0.25
cm3/1000 strokes : 298.0	
	Rated speed rpm : 1260
Tolerance -	guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 11.50
	Tolerance mm : +- 0.50
Check tolerance - cm3/1000s. : +- 9.0 -	
CIID7 (0003 += 9.0	GUIDE SLEEVE POSITION
Spreed	-
	_
Tolerance -	control lever
cm3/1000 strokes : 8.0	position degree : - 1
	Rated speed rpm : 1165
Check tolerance	t - Rack travel in mm : 10.90
cm3/1000s. : 14.0	- Rack travel in mm : 10.90 - Tolerance mm : +- 1.30
	L Toterance in . +- 1.50
-	
Rated speed rpm : 250 -	FULL LOAD DELIVERY AT FULL LOAD STOP
	+
Rack travel in mm: 5.60	Rated speed rpm : 700
Tolerance mm : +- 0.10 -	Aneroid pressure hPa : 1500
Del. quantity - cm3/1000 strokes : 21.0 -	Del. quantity
Tolerance -	cm3/1000 strokes : 298.0
cm3/1000 strokes : +- 3.0	Tolerance
Check tolerance	cm3/1000 strokes : + 1.0
cm3/1000s. : +- 6.0	Check tolerance
Spreed	+ cm3/1000s. + 9.0
Tolerance	- Spreed
cm3/1000 strokes : 4.0	Tolerance
Check tolerance	cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	Check tolerance : 14.0
	- 1113/10003 14.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
i	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
GOIDE SLEEVE TRAVEL	position degree : 55.0
Rated speed rpm : 1008	tolerance degree : +- 4.0
guide sleeve	_
travel mm : 8.61	control lever
Tolerance mm : + 0.15	position degree : 119.0
250	tolerance degree : +- 4.0
Rated speed rpm : 250	- RATED SPEED
guide sleeve - travel mm : 1.33 -	r rack travel mm : 10.90
Tolerance mm : + 0.20	Rated speed rpm : 995
1050.00100 11111	- Tolerance 1/min : +- 5
Rated speed rpm : 732	- Check
guide sleeve	speed 1/min : +- 10
travel mm : 6.35	·
Tolerance mm : +- 0.25	rack travel mm : 4.00

Tolerance 1/min : Check speed 1/min : rack travel mm : Tolerance mm :	1115 + 15 + 20 - 0.50 + 0.50 1200	Pressure hPa rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa rack travel mm	: 350 : 10.30
	+	Tolerance mm	: +- 0.15
LOW IDLE	+	Pressure hPa rack travel mm Tolerance mm	: 11.40
position degree :	81.0		
tolerance degree :	+ 4.0 +	Start interlock	
control lever position degree : tolerance degree :		Rated speed rpm Rated speed rpm Check	
Setting point w/out	bumper spring	speed 1/min Check	: > 80
Rated speed rpm :	150	speed 1/min	: < 190
CRT mm min. :	> 8.10	FUEL DELIVERY CHA	RACTERISTICS
Testing:	+		
	250 5.60 + 0.10 300	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 282.0
TORQUE CONTROL Rated speed rpm : rack travel mm :	700	Check tolerance cm3/1000s.	: + 4.0 : + 9.0
Tolerance mm : Rated speed rpm : rack travel mm : Tolerance mm :	+- 0.05 950 11.90 +- 0.05	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 197.0
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000 strokes Check tolerance cm3/1000S.	: +- 1.0 : +- 4.0
SETTING	Ţ		
Rated speed rpm : Pressure hPa : rack travel mm : Tolerance mm :	500 1500 11.90 +- 0.05	STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm	IVERY : 100 : 20.50 : +- 0.50

Del. quantity

cm3/1000 strokes : 225.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm: 5.60
Tolerance mm: +- 0.10

Del. quantity

cm3/1000 strokes : 21.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

See microcard(s) W4UU/...

Edition : 14.03.97 Test oil : ISO 4113

Combination No. : 0 402 946 020

Injection pump

Pump designation : PESSP120A320RS8038

EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -2

Governer no. : 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 115 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : +-0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

	<u>l</u>
Rack travel in mm : 12.30 Tolerance mm : +- 0.05	Rated speed rpm : 470 guide sleeve travel mm : 4.09
Del. quantity cm3/1000 strokes : 277.0	Tolerance mm : +- 0.25
Tolerance - cm3/1000 strokes : + 1.0	+ Rated speed rpm : 1470 + guide sleeve + travel mm : 11.50
Check tolerance cm3/1000s. : + 9.0	Tolerance mm : +- 0.50
Spreed	GUIDE SLEEVE POSITION
Tolerance - 8.0	control lever position degree : - 1 Rated speed rpm : 1310
Check tolerance : 12.0	+ Rack travel in mm : 11.40 + Tolerance mm : +- 1.30
-	T
Rated speed rpm : 250	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 7.20	Rated speed rpm : 600
Tolerance mm : +- 0.10 - Del. quantity -	+ Aneroid pressure - hPa : 1500
cm3/1000 strokes : 40.0	Del. quantity
Tolerance	cm3/1000 strokes : 277.0
cm3/1000 strokes : + 3.0	Tolerance
Check tolerance - cm3/1000s. : + 6.0 -	+ cm3/1000 strokes : + 1.0 - Check tolerance
Spreed	- cm3/1000s. : +- 9.0
Tolerance -	Spreed
cm3/1000 strokes : 4.0	Tolerance
Check tolerance - cm3/1000s. : 8.0 -	cm3/1000 strokes : 8.0 Check tolerance
. 0.0	cm3/1000s. : 12.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
-	position degree : 56.0
Rated speed rpm : 1057 guide sleeve	tolerance degree : +- 4.0
travel mm : 7.89	control lever
Tolerance mm : + 0.15	position degree : 118.0
Rated speed rpm : 250	tolerance degree : + 4.0
guide sleeve	RATED SPEED
travel mm : 1.33 -	rack travel mm : 11.30
Tolerance mm : +- 0.20	Rated speed rpm : 1045 Tolerance 1/min : +- 5
Rated speed rpm : 748	Tolerance 1/min : +- 5 - Check
guide sleeve	speed 1/min : +- 10
travel mm : 6.17	·
Toterance mm : → 0.25	rack travel mm : 4.00

Rated speed rpm Tolerance 1/min Check speed 1/min rack travel mm Tolerance mm Rated speed rpm	: + 15 : + 20 : 0.50 : + 0.50
LOW IDLE	
control lever position degree tolerance degree	: 87.0 : +- 4.0
control lever position degree tolerance degree	: 24.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 9.70
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 7.20 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.30 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.30 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.30 : + 0.05
Rated speed rpm	: 500

rack travel mm Tolerance mm	: 10.80 : +- 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 330 : 11.20 : + 0.15	
Pressure hPa rack travel mm Tolerance mm	: 600 : 11.90 : + 0.05	
Start interlock		
Rated speed rpm Rated speed rpm	: < 170 : > 100	
Check speed 1/min Check	: < 190	
speed 1/min	: > 80	
	: 1500 : 1000 : 272.0	

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity cm3/1000 strokes : 275.0 Tolerance cm3/1000 strokes : \leftarrow 20.0 Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.20 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 40.0 Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 4.0

Check tolerance cm3/1000s.

8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 02.06.97

Test oil

: ISO 4113

Combination No. : 0 400 866 198

Injection pump

Pump designation : PES6A100D320/3RS2763

EP type number

: 0 410 806 006

Governor

Governer design. : RSV400...950A0C2238

: -4R

Governer no.

: 0 420 233 331

Cust. part No. :

Customer-spec. information Customer : CDC

Motor

: 6 CT 8.3

Power KW

: 145.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

2.85 Prestroke mm

Tolerance mm

: +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

BASIC SETTING

950 Rated speed rpm :

Rack travel in mm: 12.15 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 121.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000S.

3.5

Spreed

Tolerance cm3/1000 strokes : 4.0 Check tolerance	Check tolerance cm3/1000s. : 6.5
cm3/1000s. : 6.5	CONTROL LEVER
Rated speed rpm : 400	<pre>control lever position degree : 96.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 5.20 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 15.0	RATED SPEED rack travel mm : 11.10 Rated speed rpm : 995
Tolerance cm3/1000 strokes : + 2.0	Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1070 Tolerance 1/min : +- 5
cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1200
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1085 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	
İ	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 79.0 tolerance degree : +- 4.0
position degree : - 3	control lever position degree : 79.0
position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50	control lever position degree : 79.0 tolerance degree : +- 4.0
position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 2.50	control lever position degree : 79.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 4.70 Tolerance mm : + 0.10 Rated speed rpm : 100
position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 2.50 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 950	control lever position degree : 79.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 4.70 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00
position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 2.50 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 950 Aneroid pressure hPa : 900	control lever position degree : 79.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 4.70 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00 Testing:
position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 2.50 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 950 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 121.5 Tolerance	control lever position degree : 79.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 4.70 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00
position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 2.50 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 950 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 121.5	control lever position degree : 79.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 4.70 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00 Testing: Rated speed rpm : 400 rack travel mm : 5.20

Rated speed rpm : 950 rack travel mm : 12.15 Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 9.80
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 305 rack travel mm : 11.70 Tolerance mm : + 0.20

Pressure hPa : 220 rack travel mm : 11.20 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 76.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : +- 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : +- 0.75 Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 13.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.20
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance cm3/1000s. : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.06.97 Test oil : ISO 4113

Combination No. : 0 400 866 236

Injection pump

Pump designation : PES6A100D320/3RS2763

EP type number : 0 410 806 006

Governor

Governer design. : RSV400...950A0C928R

Governer no. : 0 420 233 355

Cust. part No. : 3282448

Customer-spec. information

Customer : CUMMINS

Motor : 6 CT 8.3/195HP

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm: 12.15

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 121.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.5

Spreed

Tolerance cm3/1000 strokes : 4.0 Check tolerance	Check tolerance cm3/1000s. : 6.5
cm3/1000s. : 6.5	CONTROL LEVER
Rated speed rpm : 400	<pre>control lever position degree : 96.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 5.20 + Tolerance mm: +- 0.10 + Del. quantity +-	RATED SPEED rack travel mm : 11.10
cm3/1000 strokes : 15.0 + Tolerance +	Rated speed rpm : 995 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 +- Check tolerance cm3/1000s. : +- 4.5 +- Check tolerance cm3/1000s.	rack travel mm : 4.00 Rated speed rpm : 1070
Spreed + Tolerance + cm3/1000 strokes : 6.0 +	Tolerance 1/min : + 5 rack travel mm : 0.85
Check tolerance cm3/1000s. : 8.0	Tolerance mm : +- 0.55 Rated speed rpm : 1200
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1085 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 79.0 tolerance degree : + 4.0
Rack travel in mm: 0.50 + Tolerance mm: + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 2.50	Rated speed rpm : 400 rack travel mm : 4.70 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 100
Rated speed rpm : 950	CRT mm min. : > 19.00
Aneroid pressure hPa : 900	Testing: Rated speed rpm : 400
Del. quantity cm3/1000 strokes : 121.5 Tolerance	rack travel mm : 5.20 Tolerance mm : + 0.10
cm3/1000 strokes : +- 1.0 + Check tolerance cm3/1000s. : +- 3.5 + Check tolerance cm3/1000s.	rack travel mm : 2.00 Rated speed rpm : 470
Spreed Tolerance cm3/1000 strokes : 4.0	Tolerance 1/min : +- 30
	TORQUE CONTROL

950 Rated speed rpm : rack travel mm : 12.15 : +- 0.05 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 900 Pressure hPa 12.15 rack travel mm : +- 0.05 Tolerance mm

500 Rated speed rpm : Pressure hPa : rack travel mm : 9.80 : +- 0.10 Tolerance mm

MEASUREMENT

Rated speed rpm : 500

: 305 · 11.75 Pressure hPa rack travel mm : : +- 0.20 Tolerance mm

: 220 Pressure hPa rack travel mm : 11.20 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 76.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance

: +- 4.5 cm3/1000s.

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.5 20.50 : +- 1.00 Tolerance mm Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance : +- 13.0 cm3/1000s.

LOW IDLE

Rated speed rpm : 400 Rack travel in mm : 5.20 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : +- 2.0Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 18.06.97 : ISO 4113

Test oil

Combination No. : 0 400 836 044

Injection pump

Pump designation : PES6A100D320/3RS2691

: -2

EP type number : 9 410 230 028

Governor

Governer design. : RQV350...1200AB1245

: -1R

Governer no. : 0 420 213 132

Cust. part No. :

Customer-spec. information Customer : CUMMINS

Motor

: 6CT8.3

Power KW

: 138.0

TEST BENCH REQUIREMENTS

Inlet line : 2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar :

2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

Tolerance bar

: 208.5 : +- 1.5

Test lines

: 1 680 750 014

D19

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Start of delivery mark

*NW after s.o.d. : 10.00

: +- 0.50

Tolerance Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.00

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 102.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.	: 8.0	Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Rated speed rpm	: 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 0.10 : 19.0 : +- 2.0 : +- 4.5 : 5.5	Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 102.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance
(B) SETTING OF INL	‡	cm3/1000s. : 8.0
		CONTROL LEVER
GUIDE SLEEVE TRAVE	+	<pre>control lever position degree : 44.0 tolerance degree : +- 4.0</pre>
quide sleeve	+	RATED SPEED
Rated speed rpm guide sleeve travel mm	: 250 : 0.10	rack travel mm : 9.00 Rated speed rpm : 1245 Tolerance 1/min : +- 5
Tolerance mm Rated speed rpm	: + 0.10	rack travel mm : 4.00 Rated speed rpm : 1330 Tolerance 1/min : +- 15
guide sleeve travel mm	: 1.25	rack travel mm : 0.50
Tolerance mm Rated speed rpm	+	Tolerance mm : + 0.50 Rated speed rpm : 1400
guide sleeve travel mm Tolerance mm	: 2.15 : + 0.25	
Rated speed rpm guide sleeve	+	LOW IDLE
travel mm Tolerance mm	: 8.45 : + 0.25	control lever position degree : 13.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSIT	TION	Setting point w/out bumper spring
control lever position degree Rated speed rpm	: - 1 : 1250	Rated speed rpm : 100 CRT mm min. : > 9.00
	+	Testing:

Testing:

350 Rated speed rpm : 4.60 rack travel mm : **←** 0.10 Tolerance mm 2,00 rack travel mm Rated speed rpm 540 Tolerance 1/min 30 TORQUE CONTROL 1200 Rated speed rpm : rack travel mm 10.00 : **←** 0.05 Tolerance mm Start interlock Rated speed rpm : > 100 Rated speed rpm : < 290 Check speed 1/min : > 80 Check speed 1/min : < 300 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.00 : +- 1.00 Tolerance mm Del. quantity cm3/1000 strokes : 161.0 Tolerance cm3/1000 strokes : +-7.5 Check tolerance cm3/1000s. : +- 10.0 LOW IDLE 350 Rated speed rpm : Rack travel in mm : 4.60 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance çm3/1000s. Spreed Tolerance

5.5

Check tolerance cm3/1000s. : 9.0

End of test specification sheet

cm3/1000 strokes :

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.08.96 : ISO 4113

Combination No. : 0 400 844 047

Injection pump

Pump designation : PES4A90D410RS2294 EP type number : 0 410 894 011

Governor

Governer design. : RQV300...1425AB740L

Governer no.

: 0 420 212 037

Cust. part No.

Customer-spec. information Customer : MB-NFZ : OM 314 Motor Power KW 62.5

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 : +- 1.5 Tolerance bar

: 1 680 750 014 Test lines

6.0 Outside diameter :

x inside diameter : 2.0 600 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 1-3-4-2 Firing order

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance °NW : + - 0.75

BASIC SETTING

Del. quantity cm3/1000 strokes : 63.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

4.5 cm3/1000s.

Rated speed rpm : 300

Rack travel in mm : 7.30

: +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance Tolerance cm3/1000S. : +- 5.0 cm3/1000 strokes : +- 0.5Check tolerance Spreed Tolerance cm3/1000s. : +-2.5 cm3/1000 strokes : 2.0 Spreed Check tolerance Tolerance cm3/1000 strokes : cm3/1000S. 4.0 3.0 Check tolerance cm3/1000s. 4.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR CONTROL LEVER GUIDE SLEEVE TRAVEL control lever 550 position degree : 118.0 Rated speed rpm : tolerance degree : +- 4.0 guide sleeve 2.85 travel mm : + - 0.15RATED SPEED Tolerance mm 8.70 rack travel mm : 1460 Rated speed rpm Rated speed rpm : 1460 Tolerance 1/min : + 5 guide sleeve 8.50 travel mm : +- 0.10 4.00 Tolerance mm rack travel mm Rated speed rpm : : 950 Tolerance 1/min : +- 15 Rated speed rpm auide sleeve travel mm 5.35 Tolerance mm : +- 0.15 Rated speed rpm : 1700 : 775 Rated speed rpm guide sleeve travel mm 4.35 : +- 0.25 Tolerance mm LOW IDLE 300 Rated speed rpm : guide sleeve 0.95 control lever travel mm : +- 0.25 Tolerance mm 70.0 position degree : tolerance degree : +- 4.0 Setting point w/out bumper spring GUIDE SLEEVE POSITION Rated speed rpm : 100 control lever CRT mm min. :> 8.80 position degree : - 1 Rated speed rpm : 1420 Testing: Rack travel in mm: 16.50 300 Tolerance mm : +- 1.30 Rated speed rpm : rack travel mm 7.30 : +- 0.10 Tolerance mm FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 445 Rated speed rpm : 1400 Aneroid pressure hPa Del. quantity Start interlock cm3/1000 strokes : 63.0

Rated speed rpm Rated speed rpm	: >	100 220
Check speed 1/min Check	; >	80
speed 1/min	; <	240

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : +- 0.30
Del. quantity
cm3/1000 strokes : 76.0
Tolerance
cm3/1000 strokes : +- 5.0
Check tolerance
cm3/1000s. : +- 8.0

LOW IDLE

300 Rated speed rpm 7.30 Rack travel in mm: 0.10 Tolerance mm Del. quantity 12.0 cm3/1000 strokes : Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 5.0 Spreed Tolerance 2.0 cm3/1000 strokes : Check tolerance cm3/1000s. 4.0 :

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.06.95 Test oil : ISO 4113

Combination No. : 0 400 844 094

Injection pump

Pump designation : PES4A90D410RS2666 EP type number : 0 410 894 029

Governor

Governer design. : RQV300...1400AB1065

: -12L

Governer no. : 0 420 212 207

Cust. part No. :

Customer—spec. information
Customer : MB-NFZ
Motor : 0M364
Power KW : 61.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Firing order : 1-3-4-2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.55 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 59.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : + 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s.

3/1000s. : 5.0

Rated speed rpm : 300

Rack travel in mm : 8.70 Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 10.0 Tolerance
cm3/1000 strokes : +- 2.0 Check tolerance
cm3/1000s. : +- 4.0
Spreed Tolerance
cm3/1000 strokes : 2.0
Check tolerance cm3/1000s. : 4.0
(1137 (1300))
(B) SETTING OF INJECTION PUMP WITH GOVERNOR
GUIDE SLEEVE TRAVEL
Rated speed rpm : 1500
guide sleeve travel mm : 8.55
Tolerance mm : + 0.05
Rated speed rpm : 300
guide sleeve travel mm : 1.05
Tolerance mm : +- 0.25
Rated speed rpm : 500
guide sleeve travel mm : 2.55
Tolerance mm : + 0.25
Rated speed rpm : 750
guide sleeve travel mm : 4.20
Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 1400 Aneroid pressure
hPa : -
Del. quantity cm3/1000 strokes : 59.5
Tolerance
cm3/1000 strokes : +- 0.5 Check tolerance
cm3/1000s. : → 2.5 Spreed
Tolerance
cm3/1000 strokes : 3.0 Check tolerance
cm3/1000s. : 5.0

control lever position degree tolerance degree	: 116.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 9.50 : 1445 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1550 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1700
LOW IDLE	
control lever position degree tolerance degree	: 76.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 10.20
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 8.70 : + 0.10
Rated speed rpm	: 610
TORQUE CONTROL	
Dimension a mm	: 1.00 : 1400
Rated speed rpm rack travel mm Tolerance mm	: 10.55 : + 0.05
rack travel mm	: 10.55

Start interlock			
Rated speed rpm Rated speed rpm	: > : <	100 220	
Check speed 1/min Check	; >	80	
speed 1/min	: <	240	

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		475
Del. quantity			
cm3/1000 strokes	:		46.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	3.5

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		850
Del. quantity			
cm3/1000 strokes	:		49.0
Tolerance			
cm3/1000 strokes	:	+	1.5
Check tolerance			
cm3/1000s.	:	+-	4.0

STARTING FUEL DELIVERY

Rated speed rpm rack travel mm	•	100 17.20
Tolerance mm Del. quantity	: +-	0.20
cm3/1000 strokes	:	83.0
Tolerance cm3/1000 strokes	: +-	5.0
Check tolerance cm3/1000s.	: +-	8.0

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm		8.70 0.10

Del. quantity		
cm3/1000 strokes	:	10.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	4.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.06.97 Test oil : ISO 4113

Combination No. : 0 400 846 336

Injection pump

Pump designation : PES6A90D410RS2293W EP type number : 0 410 896 049

Governor

Governer design. : RQV300...1425AB740L

Governer no. : 0 420 212 037

Cust. part No. :

Customer—spec. information
Customer : MB—NFZ
Motor : 0M352
Power KW : 115.0

TEST BENCH REQUIREMENTS

Inlet line : 2.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.20 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.90 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : +- 2.5

Tolerance cm3/1000 strokes	: 3.0	control lever position degree : - 1
Check tolerance cm3/1000s.	: 4.5	Rated speed rpm : 1420
		Rack travel in mm: 16.50 Tolerance mm: +- 1.30
Rated speed rpm	: 300	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	n: 7.60	+
Tolerance mm	: +- 0.10	+ Rated speed rpm : 1400
Del. quantity cm3/1000 strokes	: 12.0	+ Aneroid pressure + hPa : -
Tolerance		+ Del. quantity
cm3/1000 strokes Check tolerance	: + 3.0	+ cm3/1000 strokes : 72.0 + Tolerance
cm3/1000s.	: +- 5.0	cm3/1000 strokes : +- 0.5
Spreed		† Check tolerance
Tolerance	. 3.0	+ cm3/1000s. : +- 2.5
cm3/1000 strokes Check tolerance	: 2.0	+ Spreed + Tolerance
cm3/1000S.	: 4.0	+ cm3/1000 strokes : 3.0
		+ Check tolerance
(B) SETTING OF IN	NIECTIAN DUMP	cm3/1000s. : 4.5
WITH GOVERNOR	ADECTION FORM	I
		+
CUIDE OF FELLE TOAL		+ CONTROL LEVER
GUIDE SLEEVE TRAN	/EL	+ control lever
Rated speed rpm	: 550	position degree : 114.0
guide sleeve		tolerance degree : +- 4.0
travel mm	: 2.85	+
Tolerance mm	: +- 0.15	+ RATED SPEED + rack travel mm: : 9.90
Rated speed rpm	: 1460	Rated speed rpm : 1460
guide sleeve		+ Tolerance 1/min : + 5
travel mm		+
Tolerance mm	: +- 0.10	rack travel mm : 4.00
Rated speed rpm	: 950	Rated speed rpm : 1575 Tolerance 1/min : +- 15
guide sleeve	. 730	+
travel mm	: 5.35	rack travel mm : 0.50
Tolerance mm	: +- 0.15	Tolerance mm : +- 0.50
Rated speed rpm	: 775	Rated speed rpm : 1700
guide sleeve		+
travel mm	: 4.35	+
Tolerance mm	: + 0.25	+ LOW IDLE
Rated speed rpm	: 300	T LOW IDLE
guide sleeve	. 300	1
travel mm	: 1.45	+ control lever
Tolerance mm	: +- 0.75	+ position degree : 68.0 + tolerance degree : +- 4.0
GUIDE SLEEVE POST	ITION	Setting point w/out bumper spring
		Rated speed rpm : 100

CRT mm min. : > 9.10 Testing: Rated speed rpm 300 7.60 rack travel mm : +- 0.10 Tolerance mm Rated speed rpm : 445 TORQUE CONTROL Rated speed rpm : 1400 : 10.90 rack travel mm : +- 0.05 Tolerance mm Start interlock Rated speed rpm :> 100 Rated speed rpm : < 220 Check speed 1/min : > 80 Check speed 1/min : < 240 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.75 Tolerance mm Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : +- 8.0 LOW IDLE 300 Rated speed rpm : Rack travel in mm: 7.60 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 12.0 Tolerance

Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000s. : 4.0

End of test specification sheet

E02

Spreed

cm3/1000 strokes : +- 3.0

: +- 5.0

Check tolerance

cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 18.06.97 : ISO 4113

Combination No. : 0 400 863 020

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A50858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1592 KY

Customer-spec. information

Customer : KHD-DMI

: F3L912/913_NEU Motor

Power KW

: 40.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1- 3- 2

: 0-120-240 : +- 0.50 Phasing

Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance	+ Check tolerance
cm3/1000 strokes : 3.5	+ cm3/1000s. : 8.0
Check tolerance	†
cm3/1000s. : 8.0	Ť
CM3/10003 0.0	+ CONTROL LEVER
	I CONTROL ELVER
	+ control lever
Rated speed rpm : 325	position degree : 107.0
	tolerance degree : +- 4.0
Rack travel in mm : 8.50	+
Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity	+ rack travel mm : 10.35
cm3/1000 strokes : 11.5	+ Rated speed rpm : 1295
Tolerance	+ Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	†
Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 4.00
Spreed : +- 4.3	Rated speed rpm : 1355 Tolerance 1/min : +- 15
Tolerance	T TOLET GIVE 1/III III . T 13
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	+ Tolerance mm : +- 0.55
cm3/1000s. : 9.0	+ Rated speed rpm : 1530
	+
	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1380
WITH GOVERNOR	+ Tolerance 1/min : +- 15
	+
	†
	T
PRITATE OF THE PROTECTION	
GUIDE SLEEVE POSITION	I ON TOLE
GUIDE SLEEVE FOSITION	LOW IDLE
control lever	LOW IDLE
control lever	LOW IDLE control lever
	control lever position degree : 74.0
control lever position degree : FREE Rated speed rpm : 800	control lever
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50	control lever position degree : 74.0 tolerance degree : + 4.0
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 74.0
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : -	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing:
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 325 rack travel mm : 325
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 510
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 510
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 510

Rated speed rpm : 1250 rack travel mm : 11.35 : +- 0.05 Tolerance mm

: 500 Rated speed rpm

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm : 20.25 : + 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : \leftarrow 7.5

Check tolerance

: +- 10.0 cm3/1000s.

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 8.50 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 18,06,97 Test oil : ISO 4113

Combination No. : 0 400 863 021

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...900A1c359L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1593 KY

Customer-spec. information

Customer : KHD-DMI

Motor

: F3L912/913_NEU

Power KW

: 40.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

RFMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1- 3- 2

: 0-120-240 : +- 0.50 Phasing

Tolerance Check

tolerance °NW : +- 0.75

Rated speed rpm : 850

BASIC SETTING

Rack travel in mm : 11.80

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Tolerance cm3/1000 strokes : 3.5	theck tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	<u> </u>
	CONTROL LEVER
705	control lever
Rated speed rpm : 325	+ position degree : 96.0 + tolerance degree : +- 4.0
Rack travel in mm: 7.90	TATES OFFE
Tolerance mm : + 0.10 Del. quantity	+ RATED SPEED + rack travel mm : 10.80
cm3/1000 strokes : 11.5	+ Rated speed rpm : 895
Tclerance	- Tolerance 1/min: +- 5
cm3/1000 strokes : +- 2.0	+
Check tolerance cm3/1000S. : +- 4.5	rack travel mm : 4.00
cm3/1000S. : +- 4.5 Spreed	+ Rated speed rpm : 940 + Tolerance 1/min : +- 10
Tolerance	+
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : +- 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1110
	Track travel mm : 4.00
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 960
WITH GOVERNOR	+ Tolerance 1/min : + 15
	+
GUIDE SLEEVE POSITION	LOW IDLE
	+ LOW IDEE
control lever	+
position degree : FREE	+ control lever
Rated speed rpm : 800	+ position degree : 75.0 + tolerance degree : + 4.0
Rack travel in mm : 0.50	+ cotes ance degree . Fin 4.0
Tolerance mm : ← 0.20	Setting point w/out bumper spring
governor spring	+ Rated speed rpm : 325
pre-tension	+ rack travel mm : 7.40
click setting x : 4.25	+ Tolerance mm : +- 0.10
	+ Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	+ ' '
_	+ CRT mm min. : > 19.50
Rated speed rpm : 850	T+:
Aneroid pressure hPa : -	† Testing:
Del. quantity	Rated speed rpm : 325
cm3/1000 strokes : 80.0	rack travel mm : 7.90
Tolerance	Tolerance mm : +- 0.10
cm3/1000 strokes : +- 1.0	2.00
Check tolerance cm3/1000s. : +- 3.0	+ rack travel mm : 2.00 + Rated speed rpm : 440
Spreed	Tolerance 1/min : +- 30
Tolerance	+
cm3/1000 strokes : 3.5	
	+ TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 11.80 Tolerance mm : + 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.90
Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0 Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 18.06.97 : ISO 4113

Combination No. : 0 400 863 024

Injection pump

Pump designation : PES3A95D410/3RS2905

EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A50917L

Governer no. : 0 420 232 639

Cust. part No. : 0423 2328 KY

Customer-spec. information Customer : KHD-DMI : F3L912 : 44.0 Motor Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : \leftarrow 1.50

Firing order : 1- 3- 2

: 0-120-240 : +- 0.50 Phasing Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Tolerance cm3/1000 strokes : 3.5	+ Check tolerance - cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	
	CONTROL LEVER
Rated speed rpm : 325	<pre>+ control lever + position degree : 107.0 + tolerance degree : +- 4.0</pre>
Rack travel in mm : 8.50 Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity cm3/1000 strokes : 11.5	rack travel mm : 10.35 Rated speed rpm : 1295
Tolerance cm3/1000 strokes : +- 2.0 Check tolerance	Tolerance 1/min : +- 5
cm3/1000s. : +- 4.5 Spreed	rack travel mm : 4.00 Rated speed rpm : 1355 Tolerance 1/min : +- 15
Tolerance cm3/1000 strokes : 5.5 Check tolerance	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. : 9.9	+ Rated speed rpm : 1530
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1380 Tolerance 1/min : + 15
	+
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 74.0
control lever position degree : FREE	control lever
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50	control lever position degree : 74.0 tolerance degree : +- 4.0
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension	control lever position degree : 74.0 tolerance degree : ÷- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : -	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing:
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. :> 19.50 Testing: Rated speed rpm : 325 rack travel mm : 325 rack travel mm : 325
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. :> 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : +- 0.10
control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. :> 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : +- 0.10

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : +- 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.00
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 90.0
Tolerance
cm3/1000 strokes : + 7.5
Check tolerance
cm3/1000s. : + 10.0

LOW IDLE

Rated speed rpm : 325 Rack travel in mm: 8.50 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 11.5 Tolerance cm3/1000 strokes : \leftarrow 2.0 Check tolerance cm3/1000s.: +- 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance 9.9 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 18.06.97 : ISO 4113

Combination No. : 0 400 864 099

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1250A50858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1595 KY

Customer-spec. information

Customer : KHD-DMI

Motor

: F4L912/913_NEU

Power KW

: 54.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm 3.00

: +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes :

76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	
	CONTROL LEVER
Rated speed rpm : 325	control lever position degree : 107.0 tolerance degree : +- 4.0
Rack travel in mm : 8.50 + Tolerance mm : +- 0.10 +	RATED SPEED
Del. quantity cm3/1000 strokes : 11.5 Folerance	rack travel mm : 10.35 Rated speed rpm : 1295 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 +- Check tolerance	rack travel mm : 4.00
cm3/1000S. : +- 4.5 +	Rated speed rpm : 1355 Tolerance 1/min : +- 15
Tolerance cm3/1000 strokes : 5.5 Check tolerance	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1530
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1380 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 74.0 tolerance degree : +- 4.0
	toterance degree . The 4.0
Rack travel in mm : 0.50 + Tolerance mm : +- 0.20 +	Setting point w/out bumper spring
Tolerance mm : +- 0.20 governor spring pre-tension	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00
Tolerance mm : +- 0.20 governor spring	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
Tolerance mm : +- 0.20 governor spring pre-tension	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100
Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 4.25	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50
Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325
Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing:
Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10 rack travel mm : 2.00
Tolerance mm : +- 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : +- 1.0	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 : **←** 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. : + 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50 Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

: +- 4.5 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.06.97 Test oil : ISO 4113

Combination No. : 0 400 864 100

Injection pump

Pump designation : PES4A95D410/3RS2905

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...900A10859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1596 KY

Customer-spec. information Customer : KHD-DMI

: F4L912/913_NEU Motor

54.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C temp. °C : 40 Tolerance °C : + 2.0 40

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

: 0-90-180-270 : ← 0.50 Phasing

Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: +- 3.0 cm3/1000s.

Tolerance cm3/1000 strokes : 3.5	+ Check tolerance + cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	<u></u>
	CONTROL LEVER
Rated speed rpm : 325	tontrol lever position degree : 96.0
	tolerance degree : +- 4.0
Rack travel in mm : 7.90 Tolerance mm : +- 0.10	+ RATED SPEED
Del. quantity	+ rack travel mm : 10.80
cm3/1000 strokes : 11.5	- Rated speed rpm : 895
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.5	Rated speed rpm : 940
Spreed	Tolerance 1/min : +- 10
Tolerance cm3/1000 strokes : 5.5	0.05
cm3/1000 strokes : 5.5 Check tolerance	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55
cm3/1000s. : 9.0	+ Rated speed rpm : 1110
	+
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00 Rated speed rpm : 960
WITH GOVERNOR	+ Tolerance 1/min : +- 15
	+
	+
GUIDE SLEEVE POSITION	İ
dolde deleve rostrion	LOW IDLE
	+
control lever	+
position degree : FREE Rated speed rpm : 300	+ control lever + position degree : 75.0
Nation operation.	tolerance degree : +- 4.0
Rack travel in mm : 0.50	+
Tolerance mm : +- 0.20	Setting point w/out bumper spring
governor spring	Rated speed rpm : 325
pre-tension	+ rack travel mm : 7.40
click setting $x : 4.25$	Tolerance mm : + 0.10
	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	+ CRT mm min. : > 19.50
Rated speed rpm : 850	Tasting
Aneroid pressure hPa : –	+ Testing:
Del. quantity	Rated speed rpm : 325
cm3/1000 strokes : 80.0	+ rack travel mm : 7.90
Tolerance	+ Tolerance mm : +- 0.10
$\alpha = 3/1000 \text{ strakes} \cdot 4 = 1.0$	1
cm3/1000 strokes : +- 1.0 Check tolerance	+ rack travel mm : 2.00
<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0</pre>	rack travel mm : 2.00 Rated speed rpm : 440
Check tolerance cm3/1000s. : +- 3.0 Spreed	
Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance	Rated speed rpm : 440
Check tolerance cm3/1000s. : +- 3.0 Spreed	Rated speed rpm : 440

Rated speed rpm 850 11.80 rack travel mm Tolerance mm : **←** 0.05

500 Rated speed rpm

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm : 20.25 : +- 0.75 Tolerance mm Del. quantity cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : \leftarrow 7.5

Check tolerance

cm3/1000s. : +- 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.90 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 11.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. **:** +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

9.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 18.06.97 : ISO 4113

Combination No. : 0 400 864 107

Injection pump

Pump designation : PES4A95D410/3RS2913

EP type number : 0 410 894 986

Governor

Governer design. : RSV325...900A1C359L

Governer no. : 0 420 232 622

Cust. part No. : 0423 2225 KY

Customer-spec. information Customer : KHD-DMI

Motor

: F4L912/Neu.compr

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

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x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm

: 3.00

Tolerance mm

: +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm

: +- 1.50

Firing order : 1-3-2

Phasing Tolerance : 0-90-270

: +- 0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

		+	
Check tolerance cm3/1000s. :	8.0	CONTROL LEVER	
Rated speed rpm :	325	control lever position degree tolerance degree	
Del. quantity cm3/1000 strokes :	+- 0.10	RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 10.80 : 895 : +- 5
Check tolerance	+- 2.0 +- 4.5	rack travel mm Rated speed rpm Tolerance 1/min	
Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :	5.5 9.0	rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1110
(B) SETTING OF INJE		rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 960 : +- 15
GUIDE SLEEVE POSITI	.ON	LOW IDLE	
control lever position degree : Rated speed rpm :	FREE 800	control lever position degree tolerance degree	
Rack travel in mm : Tolerance mm :	0.50 +- 0.20	Setting point w/o	-
governor spring pre-tension click setting x :	4.25	Rated speed rpm rack travel mm Tolerance mm	: 325 : 7.40 : + 0.10
		Rated speed rpm	: 100
FULL LOAD DELIVERY		+ CRT mm min.	: > 19.50
Rated speed rpm : Aneroid pressure hPa :	850 -	+ Testing: + Rated speed rpm	: 325
Del. quantity cm3/1000 strokes : Tolerance	80.0	rack travel mm Tolerance mm	: 7.90 : +- 0.10
cm3/1000 strokes : Check tolerance cm3/1000s. : Spreed	+- 1.0 +- 3.0	rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 440 : +- 30
Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :	3.5 8.0	TORQUE CONTROL Rated speed rpm rack travel mm	: 850 : 11.80
: : : : : : : : : : : : : : : : : : :	0.0	+ Tolerance mm	: +- 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100 20.25 rack travel mm : Tolerance mm : +- 0.75 Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

LOW IDLE

Rated speed rpm : 325

7.90 Rack travel in mm : : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 11.5 Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed Tolerance

5.5 cm3/1000 strokes :

Check tolerance

9.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 18.05.97 : ISO 4113

Combination No. : 0 400 864 109

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1250A5C917L

Governer no. : 0 420 232 639

Cust. part No. : 0423 2332 KY

Customer-spec. information Customer : KHD-DMI

Motor

: F4L912/913

Power KW

: 59.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

40 : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing Tolerance : 0-90-180-270

Check

: +- 0.50

tolerance °NW

: +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

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	+
Check tolerance cm3/1000S. : 8.0	CONTROL LEVER
Rated speed rpm : 325	control lever position degree : 107.0 tolerance degree : +- 4.0
Rack travel in mm : 8.50	+ RATED SPEED
Tolerance mm : +- 0.10	rack travel mm : 10.35
Del. quantity	+ Rated speed rpm : 1295
cm3/1000 strokes : 11.5 Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : \(\tau \) 2.0	+ rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 1355
cm3/1000s. : +- 4.5 Spreed	Tolerance 1/min : +- 15
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	+ Tolerance mm : +- 0.55
Check tolerance cm3/1000s. : 9.0	Rated speed rpm : 1530
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1380 + Tolerance 1/min : +- 15
WITH GOVERNOR	Toterance mini . +- 15
GUIDE SLEEVE POSITION	LOW IDLE
	‡
control lever	control lever
position degree : FREE Rated speed rpm : 800	+ position degree : 74.0 + tolerance degree : +- 4.0
	+
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	+ Setting point w/out bumper spring
	Rated speed rpm : 325
governor spring pre-tension	+ rack travel mm : 8.00 + Tolerance mm : + 0.10
click setting x : 4.25	+
	+ Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.50
Rated speed rpm : 1250 Aneroid pressure	Testing:
hPa : -	Rated speed rpm : 325
Del. quantity	+ rack travel mm : 8.50
cm3/1000 strokes : 76.0 Tolerance	† Tolerance mm : +- 0.10
cm3/1000 strokes : +- 1.0	rack travel mm : 2.00
Check tolerance	Rated speed rpm : 510
cm3/1000s. : +- 3.0 Spreed	Tolerance 1/min : +- 30
Tolerance cm3/1000 strokes : 3.5	TORQUE CONTROL
cm3/1000 strokes : 3.5 Check tolerance	+ Rated speed rpm : 1250
cm3/1000s. : 8.0	rack travel mm : 11.35
	+ Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.00
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 90.0
Tolerance
cm3/1000 strokes : + 7.5
Check tolerance
cm3/1000s. : + 10.0

LOW IDLE

Rated speed rpm : 325 8.50 Rack travel in mm : : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 11.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000S. : +- 4.5 Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance cm3/1000S.9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.06.97 : ISO 4113

Combination No. : 0 400 865 029

Injection pump

Pump designation : PES5A95D410/3RS2906

EP type number : 0 410 895 971

Governor

Governer design. : RSV325...900A1C859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1599 KY

Customer-spec. information

Customer : KHD-DMI

Motor : F5L912/913_NEU Power KW : 67.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

REMARKS

x inside diameter : 2.0
x length mm : 600

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 3- 5- 4- 2

: 0-72-144-216-288 : +- 0.50 Phasing

Phasing Tolerance

Check

tolerance °NW : +~ 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 70.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Tolerance +	
cm3/1000 strokes : 3.5	
1	
Check tolerance	CONTROL LEVER
cm3/1000s. : 8.0	ONTHIOL ELVEN
1	control lever
†	position degree : 91.0
725	tolerance degree : +- 4.0
Rated speed rpm : 325 +	
†	RATED SPEED
Rack travel in mm: 8.60 +	rack travel mm : 10.50
Del. quantity +	Rated speed rpm : 895
cm3/1000 strokes : 11.5	Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 920
cm3/1000s. : + 4.5	Tolerance 1/min : +- 10
Spreed	12 Co. G. 100 11 Will 1 1 1 10
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1090
cm3/1000s. : 9.0 +	mad damed a 4 22
+	rack travel mm : 4.00
+	Rated speed rpm : 940
(B) SETTING OF INJECTION PUMP +	
WITH GOVERNOR +	
+	
+	
	LOW IDLE
GUIDE SLEEVE POSITION	
\perp	control lever
control lever	
position degree : FREE +	tolerance degree : +- 4.0
Rated speed rpm : 800 +	
<u> </u>	Setting point w/out bumper spring
Rack travel in mm: 0.50 +	
Tolerance mm : +- 0.20 +	Rated speed rpm : 325
+	rack travel mm : 8.10
governor spring	Tolerance mm : +- 0.10
pre-tension +	- · · · -
click setting x : 2.75	Rated speed rpm : 100
A 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	CRT mm min. :> 19.50
FULL LOAD DELTIVEDY AT FULL LOAD STOD	CIVE HALL 11111
FULL LOAD DELIVERY AT FULL LOAD STOP	Topting
Dated and and and and and and and and and an	Testing:
Rated speed rpm : 850	natural annual a Sec
Aneroid pressure +	Rated speed rpm : 325
hPa : - +	rack travel mm : 8.60
Del. quantity +	
cm3/1000 strokes : 70.0	rack travel mm : 2.00
Tolerance	Rated speed rpm : 425
cm3/1000 strokes : +- 1.0 +	Tolerance 1/min : +- 30
Check tolerance	The second control of the second seco
cm3/1000s. : +- 3.0	
	TORQUE CONTROL
Spreed	
Tolerance +	Rated speed rpm : 850
cm3/1000 strokes : 3.5	rack travel mm : 11.80
Check tolerance	
	rack travel mm : 11.80

500 Rated speed rpm :

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm : 20.25 : **←** 0.75 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 8.60 Del. quantity cm3/1000 strokes : 11.5 Tolerance

cm3/1000 strokes : +- 2.0Check tolerance

cm3/1000s. : +- 4.5 Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

9.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 18.06.97 Test oil : ISO 4113

Combination No. : 0 400 866 223

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...900A1C859L

Governer no. : 0 420 232 622

Cust. part No. : 0423 1602 KY

Customer-spec. information

Customer : KHD-DMI

Motor

: F6L912/913_NEU

Power KW

: 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly : 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 9-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: +- 0.75 tolerance 'NW

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed	- Check tolerance - cm3/1000s. : 8.0
Tolerance cm3/1000 strokes : 3.5	-
Check tolerance cm3/1000s. : 8.0	- CONTROL LEVER - control lever
-	position degree : 96.0 tolerance degree : +- 4.0
Rated speed rpm : 325	
Rack travel in mm: 7.90	- RATED SPEED - rack travel mm : 10.80
Del. quantity cm3/1000 strokes : 11.5	- Rated speed rpm : 895 - Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : +- 2.0	- - rack travel mm ; 4.00
Check tolerance cm3/1000s. : +- 4.5	- Rated speed rpm : 940 - Tolerance 1/min : +- 10
Spreed	rack travel mm : 0.85
cm3/1000 strokes : 5.5 Check tolerance	- Tolerance mm : +- 0.55 - Rated speed rpm : 1110
cm3/1000s. : 9.0	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 960 Tolerance 1/min : +- 15
WITH GOVERNOR	- - -
GUIDE SLEEVE POSITION	- LOW IDLE
control lever	- - control lever
control lever position degree : FREE Rated speed rpm : 800	- control lever - position degree : 75.0 - tolerance degree : +- 4.0
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50	- position degree : 75.0
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 75.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension	- position degree : 75.0 - tolerance degree : +- 4.0 - - Setting point w/out bumper spring
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring	position degree : 75.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension	position degree : 75.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 850	position degree : 75.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : +- 0.10 Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 850 Aneroid pressure	position degree : 75.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing:
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0	position degree : 75.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 7.90
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 75.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 7.90 rack travel mm : 2.00 Rated speed rpm : 440
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance	position degree : 75.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : +- 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 7.90 rack travel mm : 2.00
position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 4.25 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 850 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 75.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.40 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.50 Testing: Rated speed rpm : 325 rack travel mm : 7.90 rack travel mm : 2.00 Rated speed rpm : 440

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : +- 0.75 Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

: - 10.0 cm3/1000s.

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.90

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

: +- 4.5 cm3/1000s.

beera

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 11.06.97

Test oil : ISO 4113

Combination No. : 0 400 873 042

Injection pump

Pump designation : PES3A95D32ORS2810 EP type number : 0 410 893 997

Governor

Governer design. : RSV375...1175A2C897R

Governer no. : 0 420 233 350

Cust. part No. : 8366 54717

Customer-spec. information Customer : SISU : 320 DS Motor : 55.0

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 2.55 : + 0.05 Prestroke mm Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Beginning of delivery differende

and maximum rack

travel Tolerance mm : 10.50 : +- 1.50 : 5.00 Difference CS :

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm: 10.75 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 86.5

Tolerance

cm3/1000 strokes : +- 1.0

F02

Check tolerance	+ Check tolerance
cm3/1000s. : +- 3.0	+ cm3/1000s. : +- 3.0
	+ Spreed
Spreed	Tolerance
·	<pre></pre>
Tolerance	+ Check tolerance
cm3/1000 strokes : 3.5	+ cm3/1000s. : 8.0
	1
Check tolerance	· +
cm3/1000s. : 8.0	
	CONTROL LEVER CONTROL LEVER
	` }
	🕂 control lever
Rated speed rpm : 375	+ position degree : 101.0
	tolerance degree : +- 4.0
Rack travel in mm : 4.40	+
Tolerance mm : +- 0.10	+ RATED SPEED
Del. quantity	rack travel mm : 9.70
cm3/1000 strokes : 11.5	Rated speed rpm : 1220
Tolerance	+ Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0	+
Check tolerance	† rack travei mm : 4.00
cm3/1000s. : +- 4.5	+ Rated speed rpm : 1285
Spreed	+ Tolerance 1/min : +- 15
Tolerance	}
cm3/1000 strokes : 5.5	+ rack travel mm : 0.85
Check tolerance	Tolerance mm : +- 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1440
	+
	† rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1295
WITH GOVERNOR	+ Tolerance 1/min : ÷- 15
	+
	+
	†
GUIDE SLEEVE POSITION	1011 701 5
	+ LOW IDLE
and all lavor	<u>†</u>
control lever	† aantaal Javan
position degree : FREE	t control lever
Rated speed rpm : 800	position degree : 75.0
Rook trovol in mm : 0.50	tolerance degree : + 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	+ Setting point w/out bumper spring
roterance mm : + 0.20	T setting point wrout bumper spring
dovernan Enning	Rated speed rpm : 375
governor spring pre-tension	
	rack travel mm : 3.80 Tolerance mm : + 0.10
click setting x : 4.50	T rocerance iiiii : T 0.10
	Rated speed rpm : 100
FIRE LOAD DELTHEDY AT EIRE LOAD STOP	T katen sheen thin : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	T CRT mm min. : > 19.50
Pated speed not : 1175	T CKI IIHII III III. : / 17.3U
Rated speed rpm : 1175	Tosting
Aneroid pressure	† Testing:
hPa : -	Poted and and 775
Del. quantity	Rated speed rpm : 375
cm3/1000 strokes : 86.5	+ rack travel mm : 4.40 + Tolerance mm : +- 0.10
Tolerance	Tolerance mm : +- 0.10
cm3/1000 strokes : +- 1.0	t nock though me a 2 00
	+ rack travel mm : 2.00

Rated speed rpm Tolerance 1/min	: 450 : + 30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1175 : 10.75 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 11.25 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 990 : 10.90 : + 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
nra Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 76.0
Tolerance	: 70.0
cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
rack travel mm Tolerance mm	: 20.25 : +- 0.75
Del. quantity	
cm3/1000 strokes Tolerance	: 205.0
cm3/1000 strokes	: +- 8.0
Check tolerance cm3/1000s.	: +- 11.0
LOW IDLE	
	: 375
LOW IDLE Rated speed rpm Rack travel in mm	
Rated speed rpm Rack travel in mm Tolerance mm	
Rated speed rpm Rack travel in mm	: 4.40 : + 0.10

Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0

x inside diameter : 2.0 x length mm : 600 BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. REMARKS See microcard(s) W400/... : 22.08.96 Edition : ISO 4113 Test oil (A) INJECTION PUMP SETTING VALUES Combination No. : 0 400 874 218 Set equal delivery quant. Injection pump per values _____ Pump designation : PES4A90D410RS2294 EP type number : 0 410 894 011 BEGINNING OF DELIVERY Governor Governer design. : RSV350...1400A0C2006 Test pressure bar : 26.0 Tolerance bar : + 1.0 Governer no. : 0 420 232 395 Firing order : 1-3-4-2 Cust. part No. : Phasing : 0-90-180-270 Tolerance : +- 0.50 Customer-spec. information Check Customer : MB-NFZ tolerance °NW : +- 0.75 : OM 314 Motor Power KW : 62.5 BASIC SETTING TEST BENCH REQUIREMENTS Rated speed rpm : 1380 Inlet line : 1.2 Rack travel in mm : 10.45 Test oil inlet Tolerance mm : +- 0.05 : 40 temp. °C Tolerance °C : +- 2.0 Del. quantity cm3/1000 strokes : 64.0 Overflow valve : 1 419 992 198 Tolerance cm3/1000 strokes : +- 0.5Check tolerance Inlet press. bar : 1.5 : +- 2.5 cm3/1000s. Spreed Test nozzle holde assembly : 0 681 343 009 Tolerance cm3/1000 strokes : 3.0 Opening pressure : 173.5 bar Tolerance bar : + 1.5 Check tolerance cm3/1000s. : 4.5 Test Lines : 1 680 750 014 Outside diameter : 6.0 Rated speed rpm : 350

F05

	L	- Tolerance 1/min	: +- 5
Rack travel in mm	: 9.30	L Toterance Thinn	• •
Tolerance mm		- rack travel mm	: 4.40
Del. quantity	27.0	- Rated speed rpm	
cm3/1000 strokes Tolerance	: 27.0	- Tolerance 1/min	: +- 8
cm3/1000 strokes	• +- 30	- - rack travel mm	: 1.00
Check tolerance		- Tolerance mm	
	: +- 5.0	- Rated speed rpm	: 1600
Spreed	-	•	
Tolerance cm3/1000 strokes	: 2.0	<u>-</u> _	
Check tolerance	. 2.0		····
cm3/1000s.	: 4.0	- LOW IDLE	
	4	_	
(B) SETTING OF IN	IECTION PLIMP	- - control lever	
WITH GOVERNOR	2CC11O(4 1 O(1))	- position degree	: 83.0
	-	tolerance degree	
	-	-	
GUIDE SLEEVE POSI	TION	 Setting point w/o 	out bumper spring
GOIDE SECENE LOST	11014	- Rated speed rpm	: 100
	-	-	, , , , ,
control lever		- CRT mm min.	: > 19.00
rosition degree Rated speed rpm		- Tooting:	
Rated Speed Pill	. 800	- Testing: -	
Rack travel in mm	: 0.50	- Rated speed rpm	: 350
Tolerance mm	: +- 0.20	- rack travel mm	
	1	- Tolerance mm	: + 0.10
FILL LOAD DELTVER	Y AT FULL LOAD STOP	- - rack travel mm	: 2.00
TOLL COMP PLLIFF		- Rated speed rpm	
Rated speed rpm		- Tolerance 1/min	: +- 30
Aneroid pressure			. 450
hPa Del. quantity	·	- Rated speed rpm	: 000
cm3/1000 strokes	: 64.0	- CRT mm max.	: < 1.00
Tolerance	-	_	
cm3/1000 strokes	: +- 0.5	TODOUT CONTROL	
Check tolerance cm3/1000s.	: +- 2.5	- TORQUE CONTROL - Rated speed rpm	: 1380
Spreed		- rack travel mm	
Tolerance		- Tolerance mm	: +- 0.05
cm3/1000 strokes	: 3.0	- Data di di	. (00
Check tolerance cm3/1000s.	: 4.5	 Rated speed rpm rack travel mm 	
(11137-10003)	• •••	- Tolerance mm	: + 0.10
	,	-	
2017701 151750		_	
CONTROL LEVER	<u> </u>	<u>-</u> _	
control lever		·· _	
position degree			
tolerance degree		- STARTING FUEL DE	LIVERY
DATEN CDECN	1	- Dated apoid	. 100
RATED SPEED rack travel mm	: 9.40	Rated speed rpmrack travel mm	
Rated speed rpm		- Tolerance mm	: +- 0.30
-mean means that		- various veras mini	

LOW IDLE

Rated speed rpm	:	350	
Rack travel in mm Tolerance mm Del. quantity	: : +-	9.30 0.10	
cm3/1000 strokes	:	27.0	
Tolerance cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s. Spreed	: +-	5.0	
Tolerance cm3/1000 strokes Check tolerance	:	2.0	
cm3/1000s.	:	4.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.09.96 Test oil : ISO 4113

Combination No. : 0 400 876 218

Injection pump

Pump designation : PES6A90D410RS2293 EP type number : 0 410 896 031

Governor

Governer design. : RSV350...1400A0C1080

Governer no. : 0 420 232 408

Cust. part No. :

Customer-spec, information Customer : MB-NFZ : OM 352 Motor 92.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.20 Tolerance mm : +- 0.05 Check tolerance mm : +- 0.10

10.50 Rack travel in mm : Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 9.75 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 63.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s. : +- 2.5

Spreed

Tolerance cm3/1000 strokes : 3.0	00017001 4 5 4 5 0
Check tolerance cm3/1000s. : 4.5	CONTROL LEVER control lever position degree : 118.0
	tolerance degree : +- 4.0
Rated speed rpm : 350 Del. quantity	+ RATED SPEED
cm3/1000 strokes : 11.0 Tolerance	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55
cm3/1000 strokes : +- 1.0 Check tolerance	Rated speed rpm : 1570
cm3/1000s. : +- 3.0 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1525 Tolerance 1/min : +- 15
cm3/1000 strokes : 2.5	+
Check tolerance cm3/1000s. : 4.5	rack travel mm : 8.70 Rated speed rpm : 1450 Tolerance 1/min : +- 5
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	LOW IDLE
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
	T Rated speed rpm : 350
control lever	rack travel mm : 6.80
position degree : - 3 Rated speed rpm : 800	+ Tolerance mm : +- 0.10
	Rated speed rpm : 100
Rack travel in mm : 0.50 Tolerance mm : + 0.20	CRT mm min. : > 19.50
governor spring pre-tension	Testing:
click setting x : 3.50	rack travel mm : 2.00 Rated speed rpm : 2775
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance 1/min : + 2325
Rated speed rpm : 1400	TORQUE CONTROL
Aneroid pressure hPa : -	+ Rated speed rpm : 1400 - rack travel mm : 9.75
Del. quantity	Tolerance mm : + 0.05
cm3/1000 strokes : 63.5	+
Tolerance	+ Rated speed rpm : 600 + rack travel mm : 10.00
cm3/1000 strokes : +- 0.5 Check tolerance	+ rack travel mm : 10.00 + Tolerance mm : +- 0.10
cm3/1000s. : +- 2.5	1000.00.00.00
Spreed	+
Tolerance	†
cm3/1000 strokes : 3.0 Check tolerance	FUEL DELIVERY CHARACTERISTICS
cm3/1000s. : 4.5	TOEL DELIVERY CHARACTERISTICS
	+

hPa Rated speed rpm Del. quantity cm3/1000 strokes	: - : 600 : 52.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 3.0
Aneroid pressure	
Rated speed rpm Del. quantity	: 850
cm3/1000 strokes Tolerance	: 57.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s.	: +- 3.5
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm	: 100 : 15.20
Tolerance mm Del. quantity	: +- 0.20
cm3/1000 strokes Tolerance	: 83.0
cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: +- 8.0
LOW IDLE	
Rated speed rpm	: 350
Del. quantity cm3/1000 strokes	: 11.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s. Spreed	: +- 3.0
Tolerance cm3/1000 strokes Check tolerance	: 2.5
	: 4.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07.06.97 : ISO 4113

Combination No. : F 002 A0Z 007

Injection pump

Pump designation : PES6A95D32O/3RS2881

EP type number : 9 410 637 215

Governor

Governer design. : RSV475...1100A0C881R

Governer no. : F 002 A20 207

Cust. part No. : 3928597

Customer-spec. information Customer : CUMMINS Motor : 6BTA Power KW : 122.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

Tolerance bar

· + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-6()-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

"NW after s.o.d. : 8.50 Tolerance : +- 0.10

Check

tolerance °NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 13.20

F11

Tolerance mm	: 0.05	+ Rated speed rpm	: 1100
Del. quantity	444.0	+ Aneroid pressure + hPa	: 1200
cm3/1000 strokes	: 116.9	+ Del. quantity + cm3/1000 strokes	: 116.9
Tolerance cm3/1000 strokes	: +- 1.0	Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance	***************************************	+ Check tolerance + cm3/1000s.	: + 3.0
cm3/1000s.	: +- 3.0	+ Spreed + Tolerance	
Spreed		+ cm3/1000 strokes + Check tolerance	: 4.0
Tolerance cm3/1000 strokes	: 4.0	cm3/1000s.	: 6.5
Check tolerance cm3/1000s.	: 6.5	CONTROL LEVER	
		control lever	400.0
Rated speed rpm	: 475	position degree tolerance degree	: 100.0 : +- 4.0
Rack travel in mm		RATED SPEED	40.00
Tolerance mm Del. quantity	: +- 0.10	+ rack travel mm + Rated speed rpm	: 12.20 : 1155
cm3/1000 strokes Tolerance	: 21.5	Tolerance 1/min	: +- 5
cm3/1000 strokes	: - 2.0	rack travel mm	: 6.50
Check tolerance cm3/1000s.	: +- 4.5	+ Rated speed rpm + Tolerance 1/min	
Spreed Tolerance		+ rack travel mm	: 0.85
cm3/1000 strokes Check tolerance	: 6.0	Tolerance mm Rated speed rpm	: +- 0.55 : 1400
cm3/1000s.	: 8.0	+	
		+ rack travel mm + Rated speed rpm	: 6.50 : 1215
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	Tolerance 1/min	: +- 15
GUIDE SLEEVE POSI	TTON	LOW IDLE	
GOIDE SEELE LOST	11014	T LOW IVEL	
control lever		control lever	
position degree Rated speed rpm		<pre>position degree tolerance degree</pre>	
Rack travel in mm		Control lever dif	
Tolerance mm		Grad tolerance degree	: 20.0
governor spring pre-tension		Setting point w/c	
click setting x	: 3.00	Rated speed rpm	: 475
FULL LOAD DELIVED	Y AT FULL LOAD STOP	rack travel mm Tolerance mm	: 4.70
TOLL COMP DECIVER	I AT TOLE LOAD OFOR	+ Total are min	0.10

Rated speed rpm	: 100	+ Del. quantity
CRT mm min.	: > 19.00	+ cm3/1000 strokes : 133.0 + Tolerance
Tostings		- cm3/1000 strokes : +- 2.0
Testing:		+ Check tolerance + cm3/1000s. : +- 4.0
Rated speed rpm rack travel mm		<u></u>
Tolerance mm		Aneroid pressure
rack travel mm	: 2.00	+ hPa : - Rated speed rpm : 500
rack travel mm Rated speed rpm	550	Del. quantity
Tolerance 1/min	: +- 30	+ cm3/1000 strokes : 85.9 + Tolerance
TORQUE CONTROL	والمتحدد وال	Del. quantity cm3/1000 strokes : 85.9 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0
Rated speed rpm		+ cm3/1000s. : +- 3.0
rack travel mm Tolerance mm	: 13.20 · +~ 0.05	<u> </u>
Rated speed rpm rack travel mm	: 800 : 14.20	+ STARTING FUEL DELIVERY
rack travel mm Tolerance mm	: 0.20	Rated speed rpm : 100 rack travel mm : 20.50
		+ rack travel mm : 20.50
ANDRADA (AL TORIA)		Tolerance mm : +- 0.50
ANEROID/ALTITUDE		Del. quantity
COMPENSATOR TEST		+ cm3/1000 strokes : 120.5
		+ Tolerance + cm3/1000 strokes : +- 10.0
SETTING		Check tolerance
		-1 cm3/1000s. : +- 15.0
Rated speed rpm	: 500	+
Pressure hPa		I
Rated speed rpm Pressure hPa	: 500	
Pressure hPa	10.40	+ LOW IDLE
rack travel mm Tolerance mm	: +- 0.20	+ Rated speed rpm : 475
rocerance in	0.20	+ Rated speed rpm : 475
MEASUREMENT		Rack travel in mm : 5.20
Onto de compositiones	. 500	+ Tolerance mm : +- 0.10
Rated speed rpm	: 500	<pre></pre>
Pressure hPa	: 700	+ Tolerance
rack travel mm	: 12.50	+ cm3/1000 strokes : + 2.0
Tolerance mm	: +- 0.20	+ Check tolerance
		+ cm3/1000s. : +- 4.5
Pressure hPa	: 500	Spreed
rack travel mm Tolerance mm	: 11.00 : +- 0.20	+ Tolerance + cm3/1000 strokes : 6.0
roterance mm	0.20	+ Check tolerance
		+ cm3/1000s. : 8.0
FUEL DELIVERY CHA	ARACTERISTICS	
		1
Aneroid pressure	4000	†
hPa	: 1200	+ End of test specification sheet
Rated speed rpm	: 800	Į

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 05,06,97 : ISO 4113

Combination No. : F 002 AOZ 011

Injection pump

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A0C888R

Governer no. : F 002 A20 212

Cust. part No. : 3930164

Customer-spec. information Customer : CUMMINS Motor : 6BTA Power KW : 124.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50 Tolerance : + 0.10

Check

tolerance °NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65

Tolerance mm	: +- 0.05	Rated speed rpm : 1050
Del. quantity cm3/1000 strokes	: 116.0	Aneroid pressure hPa : 1200 Del. quantity
THE TOTAL STREET	+	cm3/1000 strokes : 116.0
Tolerance cm3/1000 strokes	: + 1.0	Tolerance cm3/1000 strokes : +- 1.0
Check tolerance		Check tolerance cm3/1000s. : +- 3.0
cm3/1000s.	: +- 3.0	Spreed Tolerance
Spreed		cm3/1000 strokes : 4.0 Check tolerance
Tolerance cm3/1000 strokes	: 4.0	cm3/1000s. : 6.5
Check tolerance		
cm3/1000s.	: 6.5	CONTROL LEVER
		control lever
	+	position degree : 94.0
Rated speed rpm	: 475	tolerance degree : +- 4.0
Rack travel in mm	: 5.95	RATED SPEED
Tolerance mm	· · · · · · · · · · · · · · · · · · ·	rack travel mm : 12.70
Del. quantity		Rated speed rpm : 1115
cm3/1000 strokes	: 20.6	Tolerance 1/min : +- 5
Tolerance	+	
cm3/1000 strokes	: + 2.0 +	rack travel mm : 4.00
Check tolerance	+	Rated speed rpm : 1185
cm3/1000s.	: 	Tolerance 1/min : +- 15
Spreed	+	
Tolerance	+	rack travel mm : 0.85
cm3/1000 strokes	: 6.0	Tolerance mm : +- 0.55
Check tolerance	†	Rated speed rpm : 1300
cm3/1000s.	: 8.0	nnek #nevel me
	Ī	rack travel mm : 4.00 Rated speed rpm : 1190
(B) SETTING OF IN	IECTION DUMP	Rated speed rpm : 1190 Tolerance 1/min : +- 15
WITH GOVERNOR	SECTION FORF	Total difference 17 mm 17 . T = 13
CHARE OF ECUE DOCT	TTON	LOW TOLE
GUIDE SLEEVE POSI	1100	LOW IDLE
	†	control lever
control lever		JUN 101 U. 10101
	: FREE	
position degree	N. Carlotte and Carlotte and Carlotte and Carlotte and Carlotte and Carlotte and Carlotte and Carlotte and Car	position degree : 75.0 tolerance degree : +- 4.0
position degree Rated speed rpm Rack travel in mm	: 800	position degree : 75.0 tolerance degree : + 4.0 Control lever difference
position degree Rated speed rpm Rack travel in mm	: 800	position degree : 75.0 tolerance degree : + 4.0 Control lever difference Grad : 19.0
control lever position degree Rated speed rpm Rack travel in mm Tolerance mm	: 800	position degree : 75.0 tolerance degree : + 4.0 Control lever difference
position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring	: 800	position degree : 75.0 tolerance degree : + 4.0 Control lever difference Grad : 19.0 tolerance degree : + 6.0
position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring pre-tension	: 800 : 0.50 : + 0.20	position degree : 75.0 tolerance degree : + 4.0 Control lever difference Grad : 19.0
position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring pre-tension	: 800 : 0.50 : + 0.20	position degree : 75.0 tolerance degree : + 4.0 Control lever difference Grad : 19.0 tolerance degree : + 6.0 Setting point w/out bumper spring
position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring	: 800 : 0.50 : + 0.20	position degree : 75.0 tolerance degree : + 4.0 Control lever difference Grad : 19.0 tolerance degree : + 6.0 Setting point w/out bumper spring Rated speed rpm : 475
position degree Rated speed rpm Rack travel in mm Tolerance mm governor spring pre-tension click setting x	: 800 : 0.50 : + 0.20	position degree : 75.0 tolerance degree : + 4.0 Control lever difference Grad : 19.0 tolerance degree : + 6.0 Setting point w/out bumper spring

Rated speed rpm	: 100	+ Tolerance
CRT mm min.	: > 19.00	+ cm3/1000 strokes : +- 2.0 + Check tolerance
Testing:		+ cm3/1000s. : +- 4.0
Rated speed rpm	: 475	+ Aneroid pressure
rack travel mm Tolerance mm	: 5.95	hDo.
Tolerance mm	: +- 0.10	Rated speed rpm : 500 Del. quantity
rack travel mm	: 2.00	- cm3/1000 strokes : 83.9
Rated speed rpm	: 550	Tolerance
Tolerance 1/min	: +- 30	cm3/1000 strokes : +- 1.0 Check tolerance
TORQUE CONTROL	. 4050	+
Rated speed rpm rack travel mm	: 13.65	
Tolerance mm		STARTING FUEL DELIVERY
Rated speed rpm	: 750	Rated speed rpm : 100
		+ rack travel mm : 20.50
ANEDOTO /AL TITLING	****	Tolerance mm : +- 0.50
ANEROID/ALTITUDE COMPENSATOR TEST		<pre>Del. quantity cm3/1000 strokes : 121.5</pre>
20: 210:11011		+ Tolerance
CETTING		cm3/1000 strokes : +- 10.0
SETTING		+ Check tolerance + cm3/1000s. : +- 15.0
Rated speed rpm	: 500	+
Pressure hPa	: 1200	Ì
Rated speed rpm	: 500	
Pressure hPa	: -	+ LOW IDLE
rack travel mm Tolerance mm		+ Rated speed rpm : 475
Total affection	0.20	+ Nated Speed I pill . 415
MEASUREMENT		+ Rack travel in mm: 5.95
Rated speed rpm	: 500	+ Tolerance mm : +- 0.10 + Del. quantity
, ,		+ cm3/1000 strokes : 20.6
Pressure hPa	: 550 : 12.50	Tolerance
rack travel mm Tolerance mm	: 12.50 : +- 0.20	cm3/1000 strokes : +- 2.0 Check tolerance
1000 GITCO HAIR		cm3/1000s. : +- 4.5
Pressure hPa	: 400	Spreed
rack travel mm Tolerance mm	: 11.85 : +- 0.20	+ Tolerance + cm3/1000 strokes : 6.0
Toterance mm	. +- 0.20	Check tolerance
		- cm3/1000s. : 8.0
FUEL DELIVERY CHA	ARACTERISTICS	+
		İ
Aneroid pressure	4000	+
hPa Rated speed rpm	: 1200	+ End of test specification sheet
Del. quantity	. , , , ,	I
cm3/1000 strokes	: 120.0	+
		+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09,06,97 : ISO 4113

Combination No. : F 002 A0Z 033

Injection bumb

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1050A0C911R

Governer no. : F 002 A20 223

Cust. part No. : 3283692

Customer-spec. information

Customer : CUMMINS

Motor : 6BT-155 PS/2100

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening Pressure

208.5 bar

Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00

Tolerance : +- 0.10

Check

: +- 0.29 tolerance °NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.40

F17

Tolerance mm	: +- 0.05	†	Del. quantity cm3/1000 stro
Del. quantity cm3/1000 strokes	: 113.0	<u> </u>	Tolerance cm3/1000 stro Check toleran
Tolerance cm3/1000 strokes	: +- 1.0	+	cm3/1000s. Spreed Tolerance
Check tolerance cm3/1000s.	: + 3.0	+	cm3/1000 stro Check tolerar cm3/1000s.
Spreed		+	
Tolerance cm3/1000 strokes	: 4.0	+	CONTROL LEVER
Check tolerance cm3/1000s.	: 6.5	T + +	control lever position degr tolerance deg
Rated speed rpm	: 475	†	RATED SPEED rack travel m Rated speed r
Rack travel in mm Tolerance mm	: 5.80 : +- 0.10	+	Tolerance 1/m
Del. quantity cm3/1000 strokes Tolerance	: 20.8	‡	rack travel m Rated speed m Tolerance 1/m
cm3/1000 strokes Check tolerance	: +- 2.0	<u> </u>	rack travel m
cm3/1000s. Spreed	: +- 4.5	† † †	Tolerance mm Rated speed r
Tolerance cm3/1000 strokes	: 6.0	Ŧ	rack travel m
Check tolerance cm3/1000s.	: 8.0	+	Tolerance mm Rated speed r Tolerance 1/m
(B) SETTING OF INL WITH GOVERNOR	ECTION PUMP	‡	
		†	LOW IDLE
GUIDE SLEEVE POSIT	TION	+	control lever
Rated speed rpm		-	position degr tolerance deg
Rack travel in mm Tolerance mm	: 0.50 : +- 0.20	‡	Setting point
governor spring pre-tension click setting x	: 4.50	+++++++++++++++++++++++++++++++++++++++	Rated speed r rack travel m Tolerance mm
FULL LOAD DELIVERY	AT FULL LOAD STOP	+	Rated speed r
Rated speed rpm	: 1050	‡	CRT mm min.
Aneroid pressure hPa	: 1200	‡	Testing:

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
CONTROL LEVER	
control lever position degree tolerance degree	: 104.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.40 : 1080 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1185 : +- 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1300
rack travel mm Tolerance mm Rated speed rpm Tolerance 1/min	: 4.00 : +- 0.05 : 1185 : +- 15

gree : 83.0 egree : +- 4.0

nt w/out bumper spring

rpm : 475 mm : 5.30 n : +- 0.10

rpm : 100

: > 19.00

Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min	: 475 : 5.80 : + 0.10 : 2.00 : 550 : + 30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 13.40 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1200
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 11.10 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 700 : 12.60 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 550 : 11.75 : +- 0.20
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1200 : 750 : 119.5 : ← 2.0
Check tolerance cm3/1000s.	: +- 4.0

Aneroid pressure hPa	:		_	
Rated speed rpm Del. quantity	:		500	
cm3/1000 strokes Tolerance	:		87.0	
cm3/1000 strokes Check tolerance	:	+-	1.0	
cm3/1000S.	:	+	3.0	
STARTING FUEL DELI		ERY		
Rated speed rpm	:		100	
rack travel mm Tolerance mm	:	+-	20.25	
Del. quantity			424 5	
cm3/1000 strokes Tolerance	:		121.5	
cm3/1000 strokes	:	+-	10.0	
Check tolerance cm3/1000s.	:	+-	15.0	
LOW IDLE				
Rated speed rpm	:		475	
Rack travel in mm	:		5.80 0.10	
Tolerance mm Del. quantity	•		0.10	
cm3/1000 strokes	:		20.8	
Tolerance cm3/1000 strokes	:	+-	2.0	
Check tolerance cm3/1000s.		.	4.5	
Spreed	•	τ-	4.7	
Tolerance	:		6.0	
cm3/1000 strokes	_			
cm3/1000 strokes Check tolerance cm3/1000s.	:		8.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07.06.97 : ISO 4113

Combination No. : F 002 AOZ 051

Injection pump

Pump designation : PES4A95D320/3RS2920

EP type number : F 002 A10 012

Governor

Governer design. : RSV475...1050A0C931R

Governer no. : F 002 A20 237

Cust. part No. : 3283921

Customer-spec. information

Customer : CUMMINS : CUMMINS-4BTA-3.9 Motor

Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

: 2.45 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 9.00 : +- 0.10 Tolerance

Check

: +- 0.29 tolerance °NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 13.30 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 115.0

Tolerance cm3/1000 strokes	: +- 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s.	: +- 3.0	cm3/1000s. : +- 3.0 Spreed Tolerance
Spreed		cm3/1000 strokes : 4.0 Check tolerance
Tolerance	$\overline{1}$	cm3/1000s. : 6.5
cm3/1000 strokes	: 4.0	·
Check tolerance cm3/1000S.	: 6.5	CONTROL LEVER
		control lever position degree : 99.0
Rated speed rpm	: 475	tolerance degree : +- 4.0
Rack travel in mm	: 6.25	RATED SPEED
Tolerance mm	: + 0.10 +	rack travel mm : 12.30
Del. quantity	+	Rated speed rpm : 1110
cm3/1000 strokes	: 22.0 +	Tolerance 1/min : +- 5
Tolerance	+	4.00
cm3/1000 strokes	: +- 2.0 +	rack travel mm : 4.00
Check tolerance	· , , , = †	Rated speed rpm : 1195
cm3/1000s. Spreed	; +- 4.5	Tolerance 1/min : +- 5
Tolerance	+	rack travel mm : 0.85
	: 6.0 +	Tolerance mm : +- 0.55
Check tolerance	†	Rated speed rpm : 1500
cm3/1000s.	: 8.0	rack travel mm : 4.00
	I	Rated speed rpm : 1195
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	Tolerance 1/min : +- 15
GUIDE SLEEVE POSI	TION	LOW IDLE
control lever	‡	control lever
position degree	: FREE +	position degree : 79.0
Rated speed rpm		tolerance degree : +- 4.0
Rack travel in mm		Control lever difference
Tolerance mm	: +- 0.20 +	Grad : 20.0 tolerance degree : +- 4.0
governor spring	I	toterance degree : +- 4.0
pre-tension	I	Setting point w/out bumper spring
click setting x	: 2.50	occerning pointe will out bumper opining
	+	Rated speed rpm : 475
		rack travel mm : 5.75
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm Aneroid pressure	: 1050	Rated speed rpm : 100
hPa	: 900	CRT mm min. : > 19.00
Del. quantity cm3/1000 strokes	: 115.0	Testing:

Rated speed rpm rack travel mm Tolerance mm	: 475 : 6.25 : + 0.10 : 2.00
Rated speed rpm Tolerance 1/min	: 2.00 : 550 : +- 30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 13.30 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 14.40 : +- 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 900
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 11.20 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 600 : 13.30 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 400 : 12.00 : +- 0.20
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 900 : 750
cm3/1000 strokes Tolerance cm3/1000 strokes	
Check tolerance cm3/1000s.	: +- 4.0

Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : +-	500 75.9	_
Check tolerance cm3/1000S.	: +-	3.0	
STARTING FUEL DEL	(VERY		
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: : +-	100 20.50 0.50	
cm3/1000 strokes	:	121.4	
Tolerance cm3/1000 strokes	: +-	10.0	
Check tolerance cm3/1000s.	: +-	15.0	
		-	
LOW IDLE			
Rated speed rpm	:	475	
Rack travel in mm Tolerance mm Del. quantity	: : +-	6.25 0.10	
cm3/1000 strokes Tolerance	:	22.0	
cm3/1000 strokes	: +-	2.0	
Check tolerance cm3/1000S. Spreed	: +-	4.5	
Tolerance cm3/1000 strokes	:	6.0	
Check tolerance cm3/1000s.	:	8.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.06.97 Test oil : ISO 4113

Combination No. : 0 402 034 700

Injection pump

Pump designation : PES4P120B120RS3379 EP type number : 0 412 024 702

Governor

Governer design. : RQV475...1100PA1314K Governer no. : 0 421 815 543

Cust. part No. : 3928601

Customer-spec. information Customer : CDC
Motor : 4BTA-A
Power KW : 93.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 6.00 Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 11.55 Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 142.0

Tolerance + cm3/1000 strokes : + 1.0	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance + 4.0 + 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	Rated speed rpm : 1100
Tolerance cm3/1000 strokes : 8.0	Aneroid pressure hPa : 1200 Del. quantity
Check tolerance cm3/1000s. : 12.0	cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : +- 1.0
Rated speed rpm : 475	Check tolerance cm3/1000s. : +- 4.0 Spreed
Rack travel in mm: 6.10 Tolerance mm: : + 0.10 Del. quantity cm3/1000 strokes: 31.0 Tolerance	Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
cm3/1000 strokes : +- 3.0 +- Check tolerance cm3/1000s. : +- 5.0 +- Spreed	CONTROL LEVER
Tolerance + cm3/1000 strokes : 4.0 + Check tolerance + cm3/1000 strokes : 4.0 + cm3/1000 strokes	position degree : 111.0 tolerance degree : +- 4.0
cm3/100Cs. : 8.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	RATED SPEED rack travel mm : 10.50 Rated speed rpm : 1155 Tolerance 1/min : +- 15 rack travel mm : 6.60
GUIDE SLEEVE TRAVEL	Rated speed rpm : 1230 Tolerance 1/min : +- 5
Rated speed rpm : 1163 guide sleeve travel mm : 7.66 Tolerance mm : + 0.15 Rated speed rpm : 475	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1350
guide sleeve travel mm : 1.59 Tolerance mm : +- 0.20	LOW IDLE
Rated speed rpm : 931 guide sleeve travel mm : 5.89 Tolerance mm : +- 0.25	control lever position degree : 70.0 tolerance degree : +- 4.0
Rated speed rpm : 670 guide sleeve travel mm : 3.53	Control lever difference Grad : 43.0 tolerance degree : +- 6.0
Tolerance mm : +- 0.25 +- Rated speed rpm : 1660 +-	Setting point w/out bumper spring Rated speed rpm : 400

CRT mm min.	; > 7.40	‡	Check speed 1/min	: < 425
Testing:			FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm rack travel mm Tolerance mm	: 475 : 6.10 : +- 0.10	+	Aneroid pressure	
Rated speed rpm	: 550	‡	hPa Rated speed rpm Del. quantity	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.55 : + 0.05		cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0
Rated speed rpm rack travel mm Tolerance mm	: 750		Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0
Rated speed rpm rack travel mm Tolerance mm	: 11.00	+++++++++++++++++++++++++++++++++++++++	Aneroid pressure	: -
ANEROID/ALTITUDE COMPENSATOR TEST		+	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
SETTING		‡	cm3/1000 strokes Check tolerance	
Rated speed rpm Pressure hPa	: 1100 : 1200	-	cm3/1000s.	; +- 3.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : - : 9.60 : + 0.20	† † † †	STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm	: 100
MEASUREMENT Rated speed rpm	: 1100	+	Del. quantity cm3/1000 strokes Tolerance	: 169.0
Pressure hPa rack travel mm Tolerance mm	: 765	+ + +	cm3/1000 strokes Check tolerance cm3/1000s.	
Pressure hPa rack travel mm Tolerance mm		† + + +	LOW IDLE	
Start interlock		+	Rated speed rpm	
Rated speed rpm Rated speed rpm		‡	Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: +- 0.10
Check speed 1/min	: > 80	+	Tolerance cm3/1000 strokes	

F25

Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

Test oil

: 13.06.97 : ISO 4113

Combination No. : 0 402 736 813

Injection pump

Pump designation : PES6P110A120RS7214 EP type number : 0 412 716 805

Governor

Governer design. : RQV350...1100PA964

: -5K

Governer no. : 0 421 815 257

Cust. part No. : 3921772

Customer-spec. information Customer : CDC : 6CTA-A Motor Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 har Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 4.40 Tolerance mm : +- 0.03

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +-- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 5.50 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.55

Del. quantity cm3/1000 strokes : 187.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000 strokes : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Rated speed rpm : 100 Rated speed rpm : 1100 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 187.5 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance mm : + 0.10 Check tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 Check tolerance cm3/1000 strokes : 9.0 Control lever control lever control lever control lever control lever
Tolerance
Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 350 Rated speed rpm : 5.60 Tolerance mm : + 0.10 Del. quantity Cm3/1000 strokes : 30.0 Tolerance mm : + 0.10 Del. quantity Cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000 strokes : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 Check tolerance cm3/1000 strokes : 9.0 Check tolerance cm3/1000 strokes : 9.0 Check tolerance cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP
Spreed Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 350 Rack travel in mm : 5.60 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 9.0 CONTROL LEVER CONTROL LEVER
Check tolerance cm3/1000s. : 9.0 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 187.5 Tolerance mm : + 0.10 Tolerance cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000 strokes : + 3.0 Spreed Tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP CONTROL LEVER
Rated speed rpm : 350
Rated speed rpm : 350 Rack travel in mm : 5.60 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance Tolerance Cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000s. : + 5.0 Check tolerance cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 0.0 Check tolerance cm3/1000s. : 0.0 Check tolerance cm3/1000s. : 0.0 Control Lever
Rack travel in mm : 5.60 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 187.5 Tolerance Del. quantity cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : + 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP
Rack travel in mm : 5.60 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 5.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP
Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000s. : 5.0 Check tolerance cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP
cm3/1000 strokes : 30.0 Check tolerance Tolerance cm3/1000s. : + 4.0 cm3/1000 strokes : + 5.0 Spreed Check tolerance cm3/1000 strokes : 5.0 Spreed Check tolerance Tolerance cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP control lever
cm3/1000 strokes : +- 3.0 Spreed Check tolerance Tolerance cm3/1000 strokes : 5.0 cm3/1000 strokes : 5.0 Spreed Check tolerance cm3/1000 strokes : 8.0 cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 9.0 cm3/1000s. : 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP control lever
cm3/1000s. : + 5.0 Spreed Check tolerance Tolerance cm3/1000s. : 9.0 cm3/1000s. : 9.0 Check tolerance cm3/1000s. : 0 cm3/1000s. : 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP control lever
Spreed Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 9.0 Check tolerance cm3/1000s.: 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP Control lever
cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP control lever
cm3/1000s. : 12.0 CONTROL LEVER (B) SETTING OF INJECTION PUMP control lever
(B) SETTING OF INJECTION PUMP CONTROL LEVER
WITH GOVERNOR + position degree : 118.0 + tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL + RATED SPEED
Rated speed rpm : 1000 + rack travel mm : 13.50 + Rated speed rpm : 1150
guide sleeve + Tolerance 1/min : +- 5
travel mm : 8.20 + rack travel mm : 4.00
+ Rated speed rpm : 1305
Rated speed rpm : 350 + Tolerance 1/min : +- 15
guide sleeve + rack travel mm : 0.50
Tolerance mm : +- 0.10 + Tolerance mm : +- 0.50 + Rated speed rpm : 1400
Rated speed rpm : 450
guide sleeve + travel mm : 3.30 +
Tolerance mm : +- 0.20
Rated speed rpm : 600 + LOW IDLE

control lever position degree tolerance degree	: 67.0 : + 4.0
Control lever dif Grad tolerance degree	: 51.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 275
CRT ram min.	: > 7.20
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.60 : + 0.10
Rated speed rpm	: 425
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 650 : 13.60 : +- 0.10
Rated speed rpm rack trayel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 1100 : 1500
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : - : 7.90 : + 0.20
MEASUREMENT	
Rated speed rpm	: 1100
Pressure hPa rack travel mm Tolerance mm	: 845 : 13.80 : ← 0.20

Pressure hPa rack travel mm Tolerance mm	: 335 : 10.15 : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 290
Check speed 1/min Check	: > 80
speed 1/min	: < 300
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 650 : 203.5
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000S. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes	
cm3/1000 strokes Check tolerance	
cm3/1000s.	: +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: 100 : 11.30 : +- 0.50 : 155.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 20.0 : +- 25.0

LOW IDLE

Rated speed rpm	:	350	
Rack travel in mm Tolerance mm Del. quantity	: : +-	5.60 0.10	
3	:	30.0	
cm3/1000 strokes Check tolerance	: +-	3.0	
cm3/1000s. Spreed	: +-	5.0	
Tolerance cm3/1000 strokes Check tolerance	:	8.0	
cm3/1000s.	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.06.97 Test oil : ISO 4113

Combination No. : 0 402 736 913

Injection pump

Pump designation : PES6P120A120RS7369 EP type number : 0 412 726 935

Governor

Governer design. : RQV400...1400PA1211

: -1K

Governer no. : 0 421 815 530

Cust. part No. : 3931538

Customer-spec. information Customer : CDC
Motor : 6BTA-A
Power KW : 160.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Check

tolerance mm : +- 0.10

Rack travel in nm : 12.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Start of delivery blocking

*NW after s.o.d. : 6.75 Tolerance : + 0.50

Check

tolerance *NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.45Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 180.0	+ Tolerance mm : +- 0.25 + Rated speed rpm : 512
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 3.37 Tolerance mm : +- 0.25
Check tolerance	}
cm3/1000s. : +- 4.0	+ Rated speed rpm : 1000 + guide sleeve
Spreed	† travel mm : 5.53
Tolerance	Tolerance mm : +- 0.25
cm3/1000 strokes : 8.0	Rated speed rpm : 2130
Ol la fall and a second	† guide sleeve
Check tolerance cm3/1000s. : 13.0	+ travel mm : 13.50 + Tolerance mm : +- 0.50
	+
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 420	
	+ Rated speed rpm : 1300
Rack travel in mm: 6.10	+ Aneroid pressure
Tolerance mm : +- 0.20	+ hPa : 1500
Del. quantity cm3/1000 strokes : 16.5	+ Del. quantity + cm3/1000 strokes : 180.0
Tolerance cm3/1000 strokes : +- 3.0	+ Tolerance + cm3/1000 strokes : +- 1.0
Check tolerance	Check tolerance
cm3/1000s. : +- 5.0	+ cm3/1000s. : +- 4.0
Spreed	+ Spreed
Tolerance	Tolerance
cm3/1000 strokes : 3.0	+ cm3/1000 strokes : 8.0
Check tolerance	+ Check tolerance
cm3/1000s. : 7.0	- cm3/1000s. : 13.0
	<u> </u>
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	CONTROL LEVER
	control lever
GUIDE SLEEVE TRAVEL	position degree : 118.0
	+ tolerance degree : +- 6.0
Rated speed rpm : 1410	+
guide sleeve	+ RATED SPEED
travel mm : 8.73	rack travel mm : 13.40
Tolerance mm : + 0.25	Rated speed rpm : 1450
Rated speed rpm : 400	+ Tolerance 1/min : +- 25
Rated speed rpm : 400 guide sleeve	rack travel mm : 5.50
travel mm : 2.01	+ Rated speed rpm : 1650
Tolerance mm : +- 0.25	Tolerance 1/min : +- 5
Totel ance min	Tocci and 17mm
Rated speed rpm : 1488	rack travel mm : 0.50
guide sleeve	+ Tolerance mm : + 0.50
travel mm : 9.53	Rated speed rpm : 1875
Tolerance mm : + 0.25	†
Rated speed rpm : 462	I
guide sleeve	<u> </u>
travel mm : 2.91	LOW IDLE

G04

		† Pr
control lever position degree tolerance degree	: 68.0 : +- 6.0	+ ra + To
Control lever dif		† St
Grad tolerance degree	: 50.0 : +- 6.0	Ra
Setting point w/c	out bumper spring	+ Ra
Rated speed rpm	: 300	+ Ch
CRT mm min.	: > 8.70	+ Ch
Testing:		+ -
Rated speed rpm rack travel mm Tolerance mm	: 420 : 6.10 : +- 0.20	+ FU + An
Rated speed rpm		+ hP + Ra + De
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1300 : 14.45 : ← 0.05	+ cm + To + cm + cm
Rated speed rpm rack travel mm Tolerance mm	: 800 : 11.80 : ← 0.20	+ Sp + To + cm + Ch
Rated speed rpm rack travel mm Tolerance mm	: 13,30	+ cm + An + hP
ANEROID/ALTITUDE COMPENSATOR TEST		+ Ra + De + cm + To
SETTING		+ cm + Ch
Rated speed rpm Pressure hPa	: 1300 : 1500	+ cm
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1300 : - : 9.60 : +- 0.20	ST Ra
MEASUREMENT		† To
Rated speed rpm	: 1300	To
Pressure hPa rack travel mm Tolerance mm	: 965 : 13.10 : + 0.30	+ cm Ch cm
605		

Pressure hPa rack travel mm Tolerance mm	: 390 : 10.80 : +- 0.20
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 340
Check speed 1/min	: > 80
Check speed 1/min	: < 350
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 1500 : 800
Del. quantity cm3/1000 strokes Tolerance	: 118.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000S. Spreed	: +- 6.0
Tolerance cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 13.0
Aneroid pressure	•
hPa Rated speed rpm Del. quantity	: 1300
cm3/1000 strokes Tolerance	: 79.5
cm3/1000 strokes Check tolerance	
cm3/1000s.	: +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm	: 100 : 12.80
Tolerance mm Del. quantity	: +- 0.50
cm3/1000 strokes Tolerance	: 157.0
cm3/1000 strokes Check tolerance	: +- 20.0

G**O**5

LOW IDLE

Rated speed rpm	:	420
Rack travel in mm Tolerance mm Del. quantity	: : +-	6.10 0.20
cm3/1000 strokes	:	16.5
cm3/1000 strokes	; +-	3.0
Check tolerance cm3/1000S. Spreed	: +-	5.0
Tolerance cm3/1000 strokes	:	3.0
Check tolerance cm3/1000s.	:	7.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 17.06.97

Test oil

: ISO 4113

Combination No. : 9 400 030 737

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A0c850R

Governer no. : 9 420 034 716

Cust. pert No. : 3929409

Customer-spec. information Customer : CDC : 6BT Motor Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 har Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

G07

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : + 0.05 Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Start of delivery blocking

*NW after s.o.d. : 7.00 Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85 Tolerance mm : +- 0.05

	+ Aneroid pressure
Del. quantity	+ hPa : -
cm3/1000 strokes : 86.0	Del. quantity
Tolerance	+ cm3/1000 strokes : 86.0 + Tolerance
cm3/1000 strokes : +- 1.0	cm3/1000 strokes : +- 1.0
Ol al. A. Lauren	Check tolerance
Check tolerance cm3/1000s. : +- 3.0	+ cm3/1000s. : +- 3.0 + Spreed
	+ Tolerance
Spreed	cm3/1000 strokes : 3.5
Tolerance	+ Check tolerance + cm3/1000s. : 6.0
cm3/1000 strokes : 3.5	+
Ol alabata	+
Check tolerance cm3/1000s. : 6.0	CONTROL LEVER
	+
	control lever
Rated speed rpm : 500	<pre>position degree : 106.0 tolerance degree : +- 4.0</pre>
Mated Speed / Mill : 300	+ coterance degree 4.0
Rack travel in mm : 5.40	RATED SPEED
Tolerance mm : +- 0.10	+ rack travel mm : 9.80
Del. quantity	+ Rated speed rpm : 1165
cm3/1000 strokes : 18.5 Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	+ rack travel mm : 5.50
Check tolerance	Rated speed rpm : 1220
cm3/1000s. : +- 4.5	+ Tolerance 1/min : + 5
Spreed	+
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 3.5	+ Tolerance mm : +- 0.55
Check tolerance	+ Rated speed rpm : 1350
cm3/1000s. : 5.5	+
	rack travel mm : 5.50
	+ Rated speed rpm : 1230
(B) SETTING OF INJECTION PUMP	Tolerance 1/min : + 15
WITH GOVERNOR	†
	<u> </u>
	+
GUIDE SLEEVE POSITION	+ LOW IDLE
	İ
control lever	control lever
position degree : - 3	position degree : 87.0
Rated speed rpm : 800	tolerance degree : +- 4.0
0.50	+ Control Love difference
Rack travel in mm: 0.50	+ Control lever difference + Grad : 19.0
Tolerance mm : +- 0.20	+ Grad : 19.0 + tolerance degree : +- 6.0
governor spring	T total ance degree
pre-tension	Setting point w/out bumper spring
click setting x : 4.50	+
	Rated speed rpm : 500
FINE LOAD OF THERM AT SHEET LOAD CTOR	rack travel mm : 4.90
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 1100	T Rated speed rpm : 100
Harm Abara (bill 1 1 1 1 1 an	I toward cleans them is the

CRT mm min. : > 19.00 Testing: Rated speed rpm 500 rack travel mm : 5.40 : +- 0.10 Tolerance mm TORQUE CONTROL Rated speed rpm : 1100 rack travel mm 10.85 Tolerance mm : + 0.05 Rated speed rpm : 800 rack travel mm : 11.60 Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 800 Rated speed rpm : Pressure hPa **MEASUREMENT** 800 Pressure hPa rack travel mm 10.90 Tolerance mm : +- 0.30 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 800 Rated speed rpm : Del. quantity cm3/1000 strokes : 96.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s.: +-4.0 STARTING FUEL DELIVERY 100 Rated speed rpm :

Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : +- 15.0 LOW IDLE Rated speed rpm : 500 Rack travel in mm : 5.40 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +- 2.0Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s.5.5

End of test specification sheet

rack travel mm :

cm3/1000 strokes : 120.5

Tolerance mm Del. quantity 20.50

: +- 0.50

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.06.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 070

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A2C948R

Governer no. : F 002 A20 249

Cust. part No. : 3933621

Customer-spec. information Customer : CDC : 6BTA : 114.0 Motor Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm 2.85 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance $^{\circ}NW$: +- 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50 Tolerance : \leftarrow 0.50

Check

: +- 0.75 tolerance °NW

Barrel no. : %

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35

G10

Tolerance mm	: +- 0.05
Del. quantity cm3/1000 strokes	: 105.5
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	; +- 3.0
Spreed	
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 6.0
Rated speed rpm	: 500
Rack travel in mm Tolerance mm	: 5.35 : +- 0.10
Del. quantity cm3/1000 strokes Tolerance	: 22.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 5.5
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP
GUIDE SLEEVE POSIT	TION
control lever position degree Rated speed rpm	
Rack travel in mm Tolerance mm	: 0.50 : + 0.20
governor spring	

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1100
	: 1200
	: 105.5
	: +- 1.0
	: +- 3.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 3.5
cm3/1000s.	: 6.0
CONTROL LEVER	
control lever position degree tolerance degree	: 102.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 11.30 : 1165 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1245 : +- 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1300
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1250 : +- 15

LOW IDLE

control lever position degree : 79.0 tolerance degree : +- 4.0 Control lever difference Grad : 23.0

tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 500 rack travel mm : 4.85 Tolerance mm : + 0.10

Rated speed rpm	: 100	+	Aneroid pressure	. 4200
CRT mm min.	: > 19.00	‡	hPa Rated speed rpm	: 1200 : 900
Testing:		Ŧ	Del. quantity cm3/1000 strokes	: 122.5
Rated speed rpm	: 500	‡	Tolerance cm3/1000 strokes	: +- 2.0
rack travel mm Tolerance mm	: 5.35 : +- 0.10	†	Check tolerance cm3/1000s.	: +- 4.0
TORQUE CONTROL	4400	+	Aneroid pressure	
Rated speed rpm	1100	†	hPa	: - : :: -
rack travel mm Tolerance mm	: 12.33 : +- 0.05	†	Rated speed rpm Del. quantity	: 500
toterance min	0.03	Ī	cm3/1000 strokes	· 85 በ
Rated speed rpm	: 750	+	Tolerance	. 05.0
rack travel mm	: 13.65	+	cm3/1000 strokes	: +- 1.0
Tolerance mm	: +- 0.20	+	Check tolerance	
6	. 4000	+	cm3/1000s.	: +- 3.0
Rated speed rpm	: 13.10	<u>†</u>		
rack travel mm Tolerance mm	: + 0.20	I		
TO COLOR TO THE		₹.	STARTING FUEL DEL	.IVERY
Rated speed rpm	: 900	 		
rack travel mm	: 13.60	+	Rated speed rpm	
Tolerance mm	: +- 0.20	+	rack travel mm	
		+	Tolerance mm	: ← 0.50
ANEDOTO / ALTITUDE			Del. quantity cm3/1000 strokes	. 120 5
ANEROID/ALTITUDE COMPENSATOR TEST		Ī	Tolerance	; 120.5
COM LITOR TON TEOT		I	cm3/1000 strokes	: +- 10.0
		 	Check tolerance	
SETTING		+	cm3/1000s.	: +- 15.0
Rated speed rpm	: 500	Ţ		
Pressure hPa	: 1200	+		
Rated speed rpm	: 500	Ī	LOW IDLE	
Pressure hPa	: -	+		
rack travel mm	: 10.60	+	Rated speed rpm	: 500
Tolerance mm	: +- 0.10	†	Rack travel in mm	
MEASUREMENT		1	Tolerance mm	
- IFMOOUFLIE!AL		I	Del. quantity	• • 0.10
Rated speed rpm	: 500	1	cm3/1000 strokes	: 22.0
, · ·		+	Tolerance	
Pressure hPa	: 800	+	cm3/1000 strokes	: +- 2.0
rack travel mm	: 12.90	+	Check tolerance	
Tolerance mm	: +- 0.20	‡	cm3/1000s. Spreed	: +- 4.5
Pressure hPa	: 550	1	Tolerance	
rack travel mm	: 11.80	+	cm3/1000 strokes	: 3.5
Tolerance mm	: +- 0.20	+	Check tolerance	~ -
		†	c m 3/1000s.	: 5.5
FUEL DELIVERY CH	ARACTERISTICS	1		
		1		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 13.06.97 : ISO 4113

Combination No. : F 002 ACZ 071

Injection pump

Pump designation : PES6A95D320/3RS2928

EP type number : F 002 A10 019

Governor

Governer design. : RSV450...900A4C949R

Governer no. : F 002 A20 247

Cust. part No. : 3933099

Customer-spec. information Customer : CDC Motor : 60T 8.3 Power KW : 104.3

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 har Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85 Tolerance mm : +- 0.05

G14

	+	Aneroid pressure
Del. quantity cm3/1000 strokes :	: 109.0	hPa : - Del. quantity
Tolerance		cm3/1000 strokes : 109.0
cm3/1000 strokes	: +- 1.0	Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s.	: +- 3.0	Check tolerance cm3/1000s. : +- 3.0 Spreed
Spreed		Tolerance cm3/1000 strokes : 4.0
Tolerance	Ţ	Check tolerance cm3/1000s. : 6.5
cm3/1000 strokes	: 4.0	this/ radias
Check tolerance cm3/1000s.	: 6.5	CONTROL LEVER
	†	control lever
Rated speed rpm	: 425	position degree : 108.5 tolerance degree : +- 4.0
Rack travel in mm	: 8.90	RATED SPEED
	: + 0.10	rack travel mm : 10.80
Del. quantity	+	Rated speed rpm : 945
	: 32.0	Tolerance 1/min : +- 5
Tolerance	+	
	: +- 2.0 +	rack travel mm : 4.00
Check tolerance cm3/1000s.	: +- 4.5	Rated speed rpm : 995 Tolerance 1/min : +- 5
Spreed	; - 4. 3	Toterance Minn . +- 3
Tolerance	$\frac{1}{4}$	rack travel mm : 0.85
-	: 6.0	Tolerance mm : +- 0.55
Check tolerance	+	Rated speed rpm : 1050
cm3/1000s.	: 8.0	·
	+	rack travel mm : 4.00
(D)	†	Rated speed rpm : 1000
(B) SETTING OF INJE WITH GOVERNOR	ECTION PUMP	Tolerance 1/min : +- 15
	Ť	
GUIDE SLEEVE POSITI	ION	LOW IDLE
	+	
control lever	†	control lever
position degree	: - 3	position degree : 88.0
Rated speed rpm	: 100 I	tolerance degree : + 4.0
The second of th	+	_
Rack travel in mm	· · · · · · · · · · · · · · · · · · ·	Control lever difference
Tolerance mm	: +- 0.20 +	Grad : 20.5
**	†	tolerance degree : +- 6.0
governor spring pre-tension	1	Setting point w/out bumper spring
	: 3.25	occerns porme woode bumper spring
		Rated speed rpm : 100
FULL LOAD DELIVERY	AT FULL LOAD STOP	CRT mm min. : > 19.00
Rated speed rpm	: 900	Testing:

Rated speed rpm : 425 rack travel mm : 8.90 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 11.85 Tolerance mm : +- 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity

cm3/1000 strokes : 119.0

Toterance

cm3/1000 strokes : + 10.0 Check tolerance

cm3/1000s. : +- 15.0

LOW IDLE

Rated speed rpm : 425

Rack travel in mm : 8.90
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 32.0
Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : + 4.5 Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.06.97 Edition Test oil : ISO 4113

Combination No. : 0 402 066 708

Injection pump

Pump designation : PES6P120A120RS3358 EP type number : 0 412 026 784

Governor

Governer design: : RSV475...1150P2A619

Governer no. : 0 421 833 522

Cust. part No. : 3283019

Customer-spec. information

Customer : CDC

Motor : 6BTA-590 ELITE Power KW : 136.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 100
Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter:

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance $^{\circ}NW$: +- 0.75

Start of delivery blocking

°NW after s.o.d. : 6.75 Tolerance : \leftarrow 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

+	
Rack travel in mm : 11.60 + Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1150
Del. quantity cm3/1000 strokes : 150.0	Rated speed rpm : 1150 Aneroid pressure hPa : 1500 Del. quantity
Tolerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : 150.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : + 3.0	Check tolerance cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
Rated speed rpm : 470	control iever
+	position degree : 106.0 tolerance degree : +- 4.0
Rack travel in mm: 5.30 + Tolerance mm: +- 0.10 + Del. quantity	RATED SPEED rack travel mm : 10.60
cm3/1000 strokes : 25.0 + Tolerance	Rated speed rpm : 1195 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 +- Check tolerance +-	rack travel mm : 4.00
cm3/1000s. : +- 4.5 Spreed Tolerance	Rated speed rpm : 1300 Tolerance 1/min : +- 15
cm3/1000 strokes : 6.0 + Check tolerance	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1310 Tolerance 1/min : +- 15
‡	
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	<pre>control lever position degree : 85.0 tolerance degree : +- 4.0</pre>
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.50	Rated speed rpm : 470 rack travel mm : 4.80 Tolerance mm : +- 0.10

Testing:		+ Tolerance		7.0
Rated speed rpm	• 470	cm3/1000 strokes Check tolerance	: +-	3.0
rack travel mm	: 5.30		: +-	6.0
Tolerance mm	: +- 0.10	Spreed		
rack travel mm	. 200	† Tolerance + cm3/1000 strokes		12.0
Rated speed rpm	: 610	+ Check tolerance	•	,2.0
Tolerance 1/min	: +- 30	† cm3/1000s.	:	16.0
TORQUE CONTROL		+ Aneroid pressure		
Rated speed rpm	: 1150	∱ hFa	:	- 500
rack travel mm Tolerance mm	: 11.60 : +- 0.05	+ Rated speed rpm + Del. quantity	•	500
. 5 (6) 61. 15		cm3/1000 strokes	:	90.0
Rated speed rpm		Tolerance		2.0
rack travel mm Folerance mm		cm3/1000 strokes Check tolerance	: +-	2.0
. Otto into into		· · · · · · · · · · · · · · · · · · ·	: +-	4.0
ANIFOOTO /AL TYTUS		 †		
ANEROID/ALTITUDE COMPENSATOR TEST		I		
		STARTING FUEL DELI	VERY	
CETTING		t Dotod aroad pur		100
SETTING		+ Rated speed rpm + rack travel mm	: :	20.25
Rated speed rpm	: 500	+ Tolerance mm	: +-	0.75
Pressure hPa	: 1500	Del. quantity		445.0
rack travel mm Tolerance mm		cm3/1000 strokes Tolerance	:	165.0
TOTAL MINE MAIN		cm3/1000 strokes	: +-	20.0
Rated speed rpm	: 500	+ Check tolerance		25.0
Pressure hPa rack travel mm	8.50	cm3/1000s.	: +-	25.0
Tolerance mm	: +- 0.20	+		
MEAGUPEMENT		+		
MEASUREMENT		LOW IDLE		
Rated speed rpm	: 500	+		
Pressure hPa	: 900	Rated speed rpm	:	470
rack travel mm	: 11.00	Rack travel in mm	:	5.30
Tolerance mm	: +- 0.20		: +-	0.10
Pressure hPa	: 560	Del. quantity cm3/1000 strokes	•	25.0
rack travel mm	9.60	Tolerance	•	دی.ں
Tolerance mm	: ← 0.05	cm3/1000 strokes	: +-	2.0
		+ Check tolerance + cm3/1000S.	: +	4.5
		Spreed		4.5
FUEL DELIVERY CHA	RACTERISTICS	+ Tolerance		
		cm3/1000 strokes Check tolerance	:	6.0
Aneroid pressure		·	:	9.0
hPa	: 1500	+		
Rated speed rpm	: 750	†		
Del. quantity cm3/1000 strokes	• 167 በ	<u> </u>		
CHIDY TOOG SELOKGS	. 107.0	\mathbf{I}		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.06.97 Test oil : ISO 4113

Combination No. : 0 402 076 748

Injection pump

Pump designation : PES6P110A720RS3305

: -1

EP type number : 0 412 016 742

Governor

Governer design. : RSV300...1100P1A555

Governer no. : 0 421 833 379

Cust. part No. : 9271058

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 130 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 207.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.20
Tolerance mm : +- 0.05

uneck

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance 'NW : +- 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

1000

Rack travel in mm: 11.25 Tolerance mm: + 0.05 Del. quantity cm3/1000 strokes: 165.0 Tolerance cm3/1000 strokes: + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed	Aneroid pressure hPa : 1100 Del. quantity cm3/1000 strokes : 165.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000 strokes : 7.5
Tolerance cm3/1000 strokes : 4.0	CONTROL LEVER
Check tolerance cm3/1000s. : 7.5	control lever position degree : 108.0 tolerance degree : +- 4.0
Rated speed rpm : 400 Rack travel in mm : 4.40	RATED SPEED rack travel mm : 10.25 Rated speed rpm : 1040 Tolerance 1/min : +- 5
Tolerance mm : +- 0.10 Del. quantity : 36.0 Tolerance : 3.0	rack travel mm : 4.00 Rated speed rpm : 1095 Tolerance 1/min : +- 15
Check tolerance cm3/1000s. : + 5.5 Spreed Tolerance	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1260
cm3/1000 strokes : 4.5 Check tolerance cm3/1000s. : 7.5	rack travel mm : 4.00 Rated speed rpm : 1100 Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	- - control lever - position degree : 78.0 - tolerance degree : +- 4.0
control lever position degree : - 3 Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	- Rated speed rpm : 400 - rack travel mm : 3.90 - Tolerance mm : +- 0.10 -
FULL LOAD DELIVERY AT FULL LOAD STOP	- Testing: -
Rated speed rpm : 1000	- Rated speed rpm : 400 - rack travel mm : 4.40 - Tolerance mm : +- 0.10

rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 510 : +- 30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1000 : 11.25 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.25 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 11.30 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 550 : 1100 : 11.25 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 550 : - : 9.75 : ← 0.10
MEASUREMENT	
Rated speed rpm	: 550
Pressure hPa rack travel mm Tolerance mm	: 650 : 11.00 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 550 : 10.25 : +- 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1100 : 600 : 186.0
Tolerance cm3/1000 strokes	: +- 2.0

Check tolerance cm3/1000s.	: +- 5.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
LOW IDLE	
Rated speed rpm	: 400
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 4.40 : +- 0.10 : 36.0 : +- 3.0 : +- 5.5 : 4.5 : 7.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.06.97 Test oil : ISO 4113

Combination No. : 0 402 076 748A

Injection pump

Pump designation : PES6P110A720RS3305

: -1

EP type number : 0 412 016 742

Governor

Governer design. : RSV300...1100P1A555

Governer no. : 0 421 833 379

Cust. part No. : 9271058

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI

Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 130 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 207.0 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.20 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 11.25

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 165.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000s. : +- 3.5 Spreed Tolerance
Check tolerance cm3/1000s. : + 3.5	cm3/1000 strokes : 4.0 Check tolerance
Spreed	cm3/1000s. : 7.5
Tolerance cin3/1000 strokes : 4.0	CONTROL LEVER
Check tolerance cm3/1000s. : 7.5	<pre>control lever position degree : 108.0 tolerance degree : +- 4.0</pre>
Rated speed rpm : 400	RATED SPEED rack travel mm : 10.25 Rated speed rpm : 1025
Rack travel in mm: 4.40 + Tolerance mm: +- 0.10 + Del. quantity	Tolerance 1/min : +- 5 rack travel mm : 4.00
cm3/1000 strokes : 36.0 +	Rated speed rpm : 4.00 Tolerance 1/min : +- 15
cm3/1000 strokes : +- 3.0 + Check tolerance +- 5.5 +- 5.5	rack travel mm : 0.85 Tolerance mm : +- 0.55
Spreed Tolerance	Rated speed rpm : 1260
cm3/1000 strokes : 4.5 Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1100 Tolerance 1/min : +- 15
cm3/1000s. : 7.5	Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
+	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 78.0 tolerance degree : +- 4.0
control lever position degree : -3 Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 400 rack travel mm : 3.90 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Testing:
Rated speed rpm : 1000 + Aneroid pressure + hPa : 1100 +	Rated speed rpm : 400 rack travel mm : 4.40 Tolerance mm : +- 0.10
Del. quantity cm3/1000 strokes : 165.0	rack travel mm : 2.00 Rated speed rpm : 510 Tolerance 1/min : +- 30

		+ Aneroid pressure		
TORQUE CONTROL Rated speed rpm	• 1000	Rated speed rpm Del. quantity	:	55
rack travel mm Tolerance mm	: 11.25	cm3/1000 strokes Tolerance	:	15
Rated speed rpm	. 400	cm3/1000 strokes Check tolerance	: +-	
rack travel mm Tolerance mm	: 11.25	cm3/1000s.	: +-	
Rated speed rpm rack travel mm	: 500 : 11.30	T	TVERY	
Tolerance mm	: +- 0.10	+	100111	
		+ Rated speed rpm + rack travel mm	:	10 20
ANEROID/ALTITUDE		Tolerance mm	: +-	
COMPENSATOR TEST		- Del. quantity		
		+ cm3/1000 strokes + Tolerance	:	14
SETTING		+ cm3/1000 strokes	: +	1
		+ Check tolerance	•	•
Rated speed rpm	: 550	- cm3/1000s.	: +-	1
Pressure hPa rack travel mm	: 1100 : 11.25	†		
Tolerance mm	: + 0.05	Ŧ		
Rated speed rpm		LOW IDLE		
Pressure hPa rack travel mm	: - : 9.75	Pated speed rpm		40
Tolerance mm	: +- 0.10	+ Rated speed rpm	:	40
EASUREMENT		Rack travel in mm Tolerance mm	: +	4 0
IE/10011E/1E/17		<pre>+ Del quantity</pre>	•	Ü
Rated speed rpm	: 550	+ cm3/1000 strokes	:	3
Pressure hPa	: 650	+ Tolerance + cm3/1000 strokes	• +	
rack travel mm	: 11.00	Check tolerance	• '	
Tolerance mm	: + 0.05	+ cm3/1000s.	: +-	
Proposino Las	. 550	+ Spreed		
Pressure hPa rack travel mm	: 550 : 10.25	+ Tolerance + cm3/1000 strokes	•	
Tolerance mm	: +- 0.10	+ Check tolerance	•	
		cm3/1000s.	:	
FUEL DELIVERY CHA	DACTEDISTICS			
FOEL DELIVERY CHA	KACIEKISIICS			
Aneroid pressure		·	ficat	ion
hPa	: 1100	+	, , , , , ,	
Rated speed rpm	: 600	†		
Del. quantity cm3/1000 strokes	• 186.0	1		
Tolerance	. 100.0	Ţ		
cm3/1000 strokes Check tolerance	: +- 2.0	‡		
cm3/1000s.	: + 5.0	1		
		 		

nra Potod anood non	•		550	
Rated speed rpm Del. quantity	:		220	
cm3/1000 strokes	:		152.5	
Tolerance				
cm3/1000 strokes	:	+-	1.0	
Check tolerance cm3/1000s.	:	+-	3.5	
STARTING FUEL DELI	Į۷	ERY		
Rated speed rpm	:		100	
rack travel mm	:		20.50	
Tolerance mm	:	+-	0.50	
Del. quantity			4/5 6	
cm3/1000 strokes Tolerance	:		145.0	
cm3/1000 strokes	•	+	10.0	
Check tolerance	•		,5.0	
cm3/1000s.	:	+-	14.0	
LOU TO F			<u> </u>	
LOW IDLE				
Rated speed rpm	:		400	
Rack travel in mm	:		4.40	
Tolerance mm			0.10	
Del quantity			7/ 0	
cm3/1000 strokes Tolerance	:		36.0	
cm3/1000 strokes		+	3.0	
Check tolerance	•	•	5.0	
cm3/1000s.	:	+-	5.5	
Spreed				
Tolerance			,	
cm3/1000 strokes	:		4.5	
Check tolerance cm3/1000s.			7.5	
	•		,	

specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 16.06.97 Test oil : 16.06.97

Combination No. : 0 402 678 857

Injection pump

Pump designation : PE8P12OA32OLS7911 EP type number : 0 412 628 926

Governor

Governer design. : RSV550...1050P0A679

Governer no. : 0 421 833 598

Cust. part No. : 027 074 6502

Customer-spec. information

Customer : MB-NFZ
Motor : OM442LA, Euro

Motor

Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Overflow quantity min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 : +- 0.50 Tolerance mm

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180 : -225-270-315

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

+	
Rack travel in mm : 14.50 + Tolerance mm : +- 0.05 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 230.0	Rated speed rpm : 1050 Aneroid pressure hPa : 1100
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 230.0 Tolerance
Check tolerance cm3/1000s. : +- 4.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/10008. : +- 4.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 5.0	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	ASSEMBLY GOVERNOR SETTING
Rated speed rpm : 550	Rated speed rpm : 1085 Tolerance 1/min : +- 1
Rack travel in mm: 4.40 + Tolerance mm: +- 0.10 +	rack travel mm : 13.50 Rated speed rpm : 1125
Del. quantity cm3/1000 strokes : 19.0	Tolerance 1/min : +- 4 rack travel nm : 4.00
Tolerance + 3.0 + Check tolerance + 1.000 + 1.0000 + 1.00000 + 1.000000 + 1.0000000000	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. ; + 6.0 + Spreed + Tolerance +	Rated speed rpm : 1300
cm3/1000 strokes : 8.0 + Check tolerance cm3/1000s. : 12.0 +	Rated speed rpm : 1087 Tolerance 1/min : +- 1 rack travel mm : 13.50
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1127 Tolerance 1/min : +- 4 rack travel mm : 4.00
GUIDE SLEEVE POSITION	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
control lever position degree : - 3 Rated speed rpm : 800	Rated speed rpm : 1089 Tolerance 1/min : +- 1 rack travel mm : 13.50
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 1129 Tolerance 1/min : +- 4 rack travel mm : 4.00
governor spring pre-tension click setting x : 2.00	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300

Rated speed rpm	: 1091
Tolerance 1/min	: + 1
rack travel mm	: 13.50
Rated speed rpm	: 1131
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1093
Tolerance 1/min	: + 1
rack travel mm	: 13.50
Rated speed rpm Tolerance 1/min rack travel mm	
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1095
Tolerance 1/min	: + 1
rack travel mm	: 13.50
Rated speed rpm	: 1135
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300
LOW IDLE	
Testing:	
Rated speed rpm	: 550
rack travel mm	: 4.40
Tolerance mm	: + 0.10
SET IDLE AUXILIA	RY SPRING
rack travel mm	: 2.00
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 14.50 : + 0.05
Rated speed rpm	: 600
rack travel mm	: 15.00

Tolerance mm	: +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1100 : 14.50 : +- 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : – : 11.10 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 500 : 12.00 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 600 : 13.00 : +- 0.20
Toterance min	: +- 0.20
FUEL DELIVERY CHA	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	
FUEL DELIVERY CHA	: 1100 : 600 : 256.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1100 : 600 : 256.0 : + 2.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1100 : 600 : 256.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1100 : 600 : 256.0 : + 2.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1100 : 600 : 256.0 : +- 2.0 : +- 5.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure	: 1100 : 600 : 256.0 : +- 2.0 : +- 5.0 : 8.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm	: 1100 : 600 : 256.0 : +- 2.0 : +- 5.0 : 8.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Aneroid pressure hPa	: 1100 : 600 : 256.0 : + 2.0 : + 5.0 : 8.0 : 12.0

HO1

Check tolerance cm3/1000S. : +- 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : + 0.20
Del. quantity

cm3/1000 strokes : 250.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 4.40
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 18.06.97 Test oil : ISO 4113

Combination No. : 0 402 736 862

Injection pump

Pump designation : PES6P110A120RS7214

EP type number : 0 412 716 805

Governor

Governer design. : RQV350...1200PA964

: -30K

Governer no. : 0 421 815 432

Cust. part No. : 3282469

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA-A
Power KW : 213.0

Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120 Tolerance l/h : + 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0 Tolerance bar : +- 1.0

Prestroke mm : 4.40 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

roter diffee man

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance *NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1100

1100

Rack travel in mm : 14.75
Tolerance mm : +- 0.05

occidite in

Del. quantity

cm3/1000 strokes : 192.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. ; +- 4.0	+ Check tolerance + cm3/1000s. : 9.0
Spreed	‡
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. 9.0	<pre>control lever position degree : 66.0 tolerance degree : + 4.0</pre>
Rated speed rpm : 350	control lever position degree : 122.0 tolerance degree : +- 4.0
Rack travel in mm: 5.60 Tolerance mm: + 0.10 Del. quantity	RATED SPEED rack travel mm : 13.20 Rated speed rpm : 1250
cm3/1000 strokes : 30.0 Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 5.0	rack travel mm : 4.00 Rated speed rpm : 1405 Tolerance 1/min : + 15
Spreed Tolerance cm3/1000 strokes : 8.0	rack travel mm : 0.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : 12.0	+ Rated speed rpm : 1500 +
(8) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 67.0 tolerance degree : + 4.0
control lever position degree : - 1 Rated speed rpm : 1260	control lever position degree : 15.0 tolerance degree : +- 4.0
Rack travel in mm: 16.50 Tolerance mm: + 1.30	Setting point w/out bumper spring
TOCCI GITTEE TIME	Rated speed rpm : 275
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 7.10
Rated speed rpm : 1100 Aneroid pressure	Testing:
hPa : 1200	Rated speed rpm : 350
Del. quantity cm3/1000 strokes : 192.5 Tolerance	rack travel mm : 5.60 Tolerance mm : +- 0.10
cm3/1000 strokes : +- 1.0 Check tolerance	Rated speed rpm : 423
cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0	TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 14.75
un/	THE TANK COUNTY OF THE PARTY

H04

Tolerance mm	: +- 0.05	+ Tolerance + cm3/1000 strokes : +- 3.0
Rated speed rpm	: 650	Check tolerance
rack travel mm	: 12.80	+ cm3/1000s. : +- 6.0
Tolerance mm	: +- 0.20	+ Spreed
		+ Tolerance
Rated speed rpm	: 1200	+ cm3/1000 strokes : 8.0
		- Check tolerance
rack travel mm Tolerance mm	: +- 0.10	+ cm3/1000s. : 12.0
ANEROID/ALTITUDE		Aneroid pressure
COMPENSATOR TEST		+ hPa : -
		+ Rated speed rpm : 500
		+ Del. quantity
SETTING		+ cm3/1000 strokes : 92.0
		† Tolerance
Rated speed rpm	: 1100	+ cm3/1000 strokes : + 2.0
Pressure hPa	: 1200	+ Check tolerance
rack travel mm	: 14.75	+ cm3/1000s. : +- 4.0
Tolerance mm	: +- 0.05	+
		+
Rated speed rpm	: 1100	
Pressure hPa	: -	+ STARTING FUEL DELIVERY
rack travel mm	: გ.00	+
Tolerance mm	: ← 0.20	Set starting CRT at K-cam.
		+
MEASUREMENT		+
		+ Rated speed rpm : 100
Rated speed rpm	: 1100	+ rack travel mm : 11.20
		Tolerance mm : +- 0.50
Pressure hPa		+ Del. quantity
rack travel mm		+ cm3/1000 strokes : 155.0
Tolerance mm	: +- 0.20	+ Tolerance
		+ cm3/1000 strokes : +- 20.0
Pressure hPa		+ Check tolerance
rack travel mm	: 9.65	+ cm3/1000S. : +- 25.0
Tolerance mm	: +- 0.05	†
		†
		• †
Start interlock		LOUTINE
Dottod	. \ 100	+ LOW IDLE
Rated speed rpm		Dated aread pro . 750
Rated speed rpm	: < 290	Rated speed rpm : 350
Check		Rack travel in mm : 5.60
speed 1/min	: > 80	+ Rack travel in mm : 5.60 + Tolerance mm : +- 0.10
Check	. / 00	+ Del. quantity
speed 1/min	: < 300	+ cm3/1000 strokes : 30.0
speed timit	• • 500	Tolerance
		- + cm3/1000 strokes : +- 3.0
FUEL DELIVERY CH	ARACTERISTICS	+ Check tolerance
, occ becareit till		cm3/1000s. : +- 5.0
-		Spreed
Aneroid pressure		Tolerance
hPa	: 1200	+ cm3/1000 strokes : 8.0
Rated speed rpm		+ Check tolerance
Del. quantity		+ cm3/1000s. : 12.0
cm3/1000 strokes	: 184.0	1
5 1000 5 Cr OKES		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 25,06,97 : ISO 4113

Combination No. : 0 401 496 002

Injection pump

Pump designation : PE6R130/720RS1503

EP type number : 0 411 436 001

Governor

Governer design. : RE31

Governer no. : 0 421 890 201

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor

: 8210.42.5000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar :

2.5

Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105

Opening pressure

assembly

Tolerance bar

: 208.5

: + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

Pump-specific values

in Section (B)

must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : +- 1.0

Prestroke mm : +Tolerance mm : +-7.00

: +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 13.50

: +- 0.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

Check

tolerance °NW : +- 0.40

Barrel no. : 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 VTESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: Setting point (P, R and H pump) 3.100 Uact V 13.00 CRT mm Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10 Check value (P, R and H pump) : 1.700 Uact V CRT mm 6.15 : +/- 0.25 Tolerance mm Check tolerance mm : +/- 0.30 Setting point (amuq M) : 3... 12.50 3.100 Uact V CRT mm Tolerance mm : ± -0.05 Check : +/- 0.10 tolerance mm Check value (m pump) 1.700 Uact V 5.50 CRT mm Tolerance mm : +/- 0.25 Check : +/- 0.30 tolerance mm Stop position : Value with Uact V deenergised adjusting magnet and control rod in stop position. 0.75 CRT mm

: +/- 0.25

: +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60Amplitude V : 1.4Tolerance V : +/-0.6

Check

tolerance V : +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 950 Uact V : Del. quantity 3.218 cm3/1000 strokes : 279.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750

Uact V : 3.218

Del. quantity
cm3/1000 strokes : 293.0

Tolerance
cm3/1000 strokes : +- 6.0

Check tolerance
cm3/1000s. : +- 10.0

Rated speed rpm : 550
Uact V : 2.300
Del. quantity
cm3/1000 strokes : 189.0
Tolerance
cm3/1000 strokes : +- 4.5
Check tolerance
cm3/1000s. : +- 9.0

80H

Check

Tolerance mm

tolerance mm

TEST POINT L1

Rated speed rpm 300 1.260 Uact V Tolerance Volt : +- 0.060Check tolerance Volt : +- 0.120 Del. quantity cm3/1000 strokes : 24.0 Tolerance cm3/1000 strokes : +-3.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.700
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : +- 20.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 20.06.97 Edition Test oil : ISO 4113

Combination No. : 0 401 846 529

Injection pump

Pump designation : PE6P120A320RS3186 EP type number : 0 411 826 756

Governor

Governer design. : RQV250...1025PA921

: -4

Governer no. : 0 421 813 787

Cust. part No. : 422719-P05 V. 06/92

Customer-spec. information

Customer : VOLVO-TRUCK : TD102F (Q) Motor Power KW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

H10

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.65 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : \leftarrow 0.30 tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

	,	
Rack travel in mm : Tolerance mm :		- - Rated speed rpm : 430 - guide sleeve
Del. quantity cm3/1000 strokes :	198.0	- travel mm : 3.65 - Tolerance mm : +- 0.15
Tolerance		- Rated speed rpm : 700 - guide sleeve
cm3/1000 strokes :	+ 1.0	- travel mm : 6.50 - Tolerance mm : +- 0.10
Check tolerance cm3/1000S.	: +- 4.0	- GUIDE SLEEVE POSITION
Spreed		•
Tolerance cm3/1000 strokes :	5.0	- control lever - position degree : - 1 - Rated speed rpm : 1080
Check tolerance cm3/1000s.	9.0	Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Rated speed rpm	: 250	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : Tolerance mm : Del. quantity	: 4.30 : +- 0.10	- Rated speed rpm : 700 - Aneroid pressure - hPa : 1000
cm3/1000 strokes : Tolerance	-	- Del. quantity - cm3/1000 strokes : 198.0
cm3/1000 strokes : Check tolerance cm3/1000s.	: +- 2.5 : +- 5.0	- Tolerance - cm3/1000 strokes : +- 1.0 - Check tolerance
Spreed Tolerance		- cm3/1000s. : +- 4.0 - Spreed
cm3/1000 strokes : Check tolerance	5.0	- Tolerance - cm3/1000 strokes : 5.0 - Check tolerance
cm3/1000S.	7.0	- cm3/1000s. : 9.0
(B) SETTING OF INJE	ECTION PUMP	
		- CONTROL LEVER
GUIDE SLEEVE TRAVEL	-	- control lever - position degree : 62.0
Rated speed rpm : guide sleeve	+	tolerance degree : +- 4.0
travel mm : Tolerance mm :	: 8.40 + : +- 0.10	- control lever - position degree : 117.0 - tolerance degree : +- 4.0
Rated speed rpm : guide sleeve	: 250	- RATED SPEED
travel mm : Tolerance mm :	: 1.25 + : +- 0.05	- rack travel mm : 10.40 - Rated speed rpm : 1060 - Tolerance 1/min : +- 5
Rated speed rpm : guide sleeve	900	rack travel mm : 4.00
travel mm :	: 6.50 : +- 0.10	- Rated speed rpm : 1125 - Tolerance 1/min : +- 15

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1250
LOW IDLE	

control lever position degree : 65.0 tolerance degree : + 4.0

control lever position degree 8.0 : tolerance degree : +- 4.0

Setting point w/out bumper spring

100 Rated speed rpm :

CRT mm min. : > 5.70

Testing:

250 Rated speed rpm 4.30 rack travel mm Tolerance min : + 0.10

300 Rated speed rpm :

TORQUE CONTROL 700 Rated speed rpm 11.45 rack travel mm : **←** 0.05 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm 500 Pressure hPa 1000 rack travel mm 11.45 : +- 0.05 Tolerance mm

500 Rated speed rpm Pressure hPa 8.90 rack travel mm Tolerance mm : +- 0.10

MEASUREMENT

500 Rated speed rpm :

Pressure hPa 510 rack travel mm 2.20 : +- 0.20 Tolerance mm

: 100 Pressure hPa rack travel mm 0.25 : +- 0.05 Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa 700 Rated speed rpm : Del. quantity cm3/1000 strokes : 144.0 Tolerance

cm3/1000 strokes : +- 1.0Check tolerance

cm3/1000s. : +-4.0

LOW IDLE

Rated speed rpm : 250 4.30 Rack travel in mm : Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 2.5Check tolerance cm3/1000s. : +--5.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 7.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 20.06.97 : ISO 4113

Combination No. : 0 402 036 756

Injection pump

Pump designation : PES6P120A720/3LS3255

: -3

EP type number : 0 412 026 774

Governor

Governer design. : RQ300/1000PA813-19

Governer no. : 0 421 801 561

Cust. part No. : 51.11103-7316

Customer-spec. information

Customer : MAN

Motor

: D2866LFO5

Power KW

: 272.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : +- 1.0

Prestroke mm : 3.75 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 15.00

Tolerance mm : +- 0.50

Firing order : 6-2-4-1-5-

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15

Tolerance mm : +- 0.05

Rated speed rpm : 300

H13

	+ Tolerance mm : +- 0.10
Rack travel in mm: 5.00	Toterance min
Tolerance mm : +- 0.10	+
Del. quantity	+ GUIDE SLEEVE POSITION
cm3/1000 strokes : 20.0 Tolerance	†
cm3/1000 strokes : +- 3.0	- control lever
Check tolerance	position degree : 109
cm3/1000S. : +- 6.0	+ Rated speed rpm : 550
Spreed	Post trought in my 20.00
Tolerance cm3/1000 strokes : 8.0	+ Rack travel in mm : 20.00 + Tolerance mm : +- 0.80
Check tolerance	+ 3.00
cm3/1000s. : 12.0	+
	+ RATED SPEED
(B) SETTING OF INJECTION PUMP	+ rack travel mm : 14.10 + Rated speed rpm : 1053
WITH GOVERNOR	Tolerance 1/min : +- 8
	+
	+ rack travel mm : 4.00
GUIDE SLEEVE TRAVEL	Rated speed rpm : 1180 Tolerance 1/min : +- 15
Rated speed rpm : 1059	Total ance min . +- 15
guide sleeve	rack travel mm : 0.50
travel mm : 6.53	+ Tolerance mm : +- 0.50
Tolerance mm : + 0.10	Rated speed rpm : 1300
Rated speed rpm : 300	Ţ
guide sleeve	+
travel mm : 1.79	
Tolerance mm : +- 0.10	+ LOW IDLE
Rated speed rpm : 1000	I
guide sleeve	+ control lever
travel mm : 5.20	+ position degree : 254.6
Tolerance mm : +- 0.10	tolerance degree : +- 4.0
Rated speed rpm : 810	Setting point w/out bumper spring
guide sleeve	+
travel mm : 6.05	+ Rated speed rpm : 200
Tolerance mm : + 0.10	+ CRT mm min. : > 6.50
Rated speed rpm : 394	T CRI IIIII III III
guide sleeve	+ Testing:
travel mm : 4.07	+
Tolerance mm : \leftarrow 0.10	+ Rated speed rpm : 300 + rack travel mm : 5.00
Rated speed rpm : 500	+ Tolerance mm : +- 0.10
guide sleeve	Total arise man
travel mm : 6.00	rack travel mm : 2.00
Tolerance mm : +- 0.10	Rated speed rpm : 380
Rated speed rpm : 1240	Tolerance 1/min : +- 20
guide sleeve	
travel mm : 11.50	TORQUE CONTROL
Tolerance mm : + 0.50	Rated speed rpm : 700
Rated speed rpm : 840	+ rack travel mm : 15.15 + Tolerance mm : +- 0.05
guide sleeve	+ Total and the same of the sa
travel mm : 6.15	Rated speed rpm : 1000

rack travel mm Tolerance mm		<u></u>
Rated speed rpm	: 700	Aneroid pressure hPa : -
rack travel mm Tolerance mm		Rated speed rpm : 700 Del. quantity
		- cm3/1000 strokes : 94.0 Tolerance
ANEROID/ALTITUDE COMPENSATOR TEST		- cm3/1000 strokes : +- 5.0 - Check tolerance
CETTANC		+ cm3/1000s. : +- 8.0 + Spreed
SETTING	: 500	Tolerance cm3/1000 strokes : 10.0
Rated speed rpm Pressure hPa rack travel mm	: 1200	Aneroid pressure
Tolerance mm		hPa : - Rated speed rpm : 500
Rated speed rpm Pressure hPa	: 500	Del. quantity - cm3/1000 strokes : 139.0
rack travel mm Tolerance mm		+ Tolerance + cm3/1000 strokes : +- 1.0
MEASUREMENT		Check tolerance cm3/1000s. : +- 4.0
Rated speed rpm	: 500	+
Pressure hPa rack travel mm	: 470 : 14.20	STARTING FUEL DELIVERY
Tolerance mm	: +- 0.20	+ Rated speed rpm : 100 + Del. quantity
Pressure hPa rack travel mm	: 110 : 12.35	+ cm3/1000 strokes : 220.0 + Tolerance
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : +- 10.0 Check tolerance
Start interlock		
Rated speed rpm Rated speed rpm		<u> </u>
Check	. \ 200	LOW IDLE
speed 1/min Check	: > 80	Rated speed rpm : 300
speed 1/min	: < 240	Rack travel in mm : 5.00 Tolerance mm : +- 0.10
FUEL DELIVERY CHA	ARACTERISTICS	Del. quantity cm3/1000 strokes : 20.0
Anon-id monnum		+ Tolerance + cm3/1000 strokes : +- 3.0
Aneroid pressure hPa Rated speed rpm	: 1200 : 1000	- Check tolerance - cm3/1000s. : +- 6.0 - Spreed
Del. quantity cm3/1000 strokes		Tolerance cm3/1000 strokes : 8.0
Tolerance cm3/1000 strokes		Check tolerance cm3/1000s. : 12.0
Check tolerance cm3/1000S.	: +- 6.0	‡

H15

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.06.97 : ISO 4113 Edition Test oil

Combination No. : 0 402 640 838

Injection pump

Pump designation : PE12P12OA52OLS7829

: -1

EP type number : 0 412 620 827

Governor

Governer design. : RQV300...1150PA1039

: -1K

: -(k Governer no. : 0 421 815 315

Cust. part No. : 3-7226

Customer-spec. information

Customer : MAN
Motor : D2842LE401
Power KW : 735.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 075

H17

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 12-1A- 5- 9A- 8

: - 3A- 4-11A- 10 : - 2A- 6

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 13.85 Tolerance mm : \leftarrow 0.05

		1
Del. quantity cm3/1000 strokes	: 305.0	Rated speed rpm : 450 guide sleeve travel mm : 4.21
Tolerance cm3/1000 strokes	: +- 1.0	Tolerance mm : +- 0.25
Check tolerance cm3/1000s.	: +- 4.0	Rated speed rpm : 1450 + guide sleeve + travel mm : 13.50 + Tolerance mm : +- 0.50
Spreed		+ Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes	: 5.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s.	: 9.0	control lever position degree : - 1 Rated speed rpm : 1280
Rated speed rpm		Rack travel in mm: 12.80 Tolerance mm: +- 2.00
Rack travel in mm Tolerance mm Del. quantity	: 6.80 : - 0.10	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes Tolerance	: 45.0	Rated speed rpm : 1150 Aneroid pressure
cm3/1000 strokes	: ← 5.0	+ hPa : 1300 + Del. quantity
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	+ cm3/1000 strokes : 305.0 + Tolerance + cm3/1000 strokes : + 1.0 - Check tolerance
GUIDE SLEEVE TRAVE	EL .	+ cm3/1000s. : +- 4.0 + Spreed + Tolerance
Rated speed rpm guide sleeve	: 1206	cm3/1000 strokes : 5.0 Check tolerance
travel mm Tolerance mm	: 10.42 : +- 0.25	cm3/1000s. : 9.0
Rated speed rpm guide sleeve	: 300	CONTROL LEVER
travel mm Tolerance mm	: 2.24 : + 0.25	control lever
Rated speed rpm guide sleeve	: 795	position degree : 120.0 + tolerance degree : + 4.0
travel mm Tolerance mm	: 6.88 : +- 0.25	RATED SPEED rack travel mm : 12.80 Rated speed rpm : 1203
Rated speed rpm guide sleeve	: 329	Tolerance 1/min : +- 8
travel mm Tolerance mm	: 2.75 : +- 0.25	rack travel mm : 4.00 Rated speed rpm : 1325 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	: 379	rack travel mm : 0.50
travel mm Tolerance mm	: 3.53 : +- 0.25	Tolerance mm : +- 0.50 + Rated speed rpm : 1450

control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 200 CRT mm min. : > 8.30 Testing: Rated speed rpm : 300 rack travel mm : 6.80 Tolerance mm : + 0.10 Rated speed rpm : 33C TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm : + 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : + 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : + 0.05 Rated speed rpm : 13.85 Tolerance mm : + 0.05 Rated speed rpm : 13.85 Tolerance mm : + 0.05		
position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 200 CRT mm min. :> 8.30 Testing: Rated speed rpm : 300 rack travel mm : 6.80 Tolerance mm : + 0.10 Rated speed rpm : 33C TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm : + 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : + 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : + 0.05	LOW IDLE	
Rated speed rpm : 200 CRT mm min. :> 8.30 Testing: Rated speed rpm : 300 rack travel mm : 6.80 Tolerance mm :+ 0.10 Rated speed rpm : 330 TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm :+ 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm :+ 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm :+ 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm :+ 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm :+ 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm :+ 0.05	position degree	: 74.0 : +- 4.0
CRT mm min. :> 8.30 Testing: Rated speed rpm : 300 rack travel mm : 6.80 Tolerance mm :+ 0.10 Rated speed rpm : 33C TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm :+ 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm :+ 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm :+ 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm :+ 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm :+ 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm :+ 0.05	Setting point w/o	ut bumper spring
Rated speed rpm : 300 rack travel mm : 6.80 Tolerance mm : +- 0.10 Rated speed rpm : 33C TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm : +- 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : +- 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05	Rated speed rpm	: 200
Rated speed rpm : 300 rack travel mm : 6.80 Tolerance mm : +- 0.10 Rated speed rpm : 33C TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm : +- 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : +- 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05	CRT mm min.	: > 8.30
rack travel mm : 6.80 Tolerance mm : +- 0.10 Rated speed rpm : 33C TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm : +- 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : +- 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05	Testing:	
TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.85 Tolerance mm : + 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : + 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : + 0.05	rack travel mm	: 6.80
Rated speed rpm : 13.85 Tolerance mm : + 0.05 Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : + 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : + 0.05	Rated speed opm	: 33C
Tack travel mm : 12.30 Tolerance mm : +- 0.10 Rated speed rpm : 900 rack travel mm : 13.10 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05	Rated speed rpm rack travel mm	: 13.85
rack travel mm : 13.10 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 6.90 Tolerance mm : +- 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05	rack travel mm	: 12.30
rack travel mm : 6.90 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 8.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : + 0.05	rack travel mm	: 13.10
rack travel mm : 8.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : + 0.05	rack travel mm	: 6.90
COMPENSATOR TEST SETTING Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05	rack travel mm	: 8.60
Rated speed rpm : 1150 Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05		
Pressure hPa : 1300 rack travel mm : 13.85 Tolerance mm : +- 0.05	SETTING	
Rated speed rpm : 1150	Pressure hPa rack travel mm	: 1300 : 13.85
	Rated speed rpm	: 1150

Pressure hPa rack travel mm Tolerance mm	: - : 10.00 : +- 0.10
MEASUREMENT	
Rated speed rpm	: 1150
Pressure hPa rack travel mm Tolerance mm	: 850 : 12.55 : +- 0.15
Pressure hPa rack travel mm Tolerance mm	: 400 : 10.35 : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 240
Check speed 1/min Check	: > 80
speed 1/min	: < 260
FUEL DELIVERY CHA	RACTERISTICS
	
Aneroid pressure	• 1300
hPa Rated speed rpm	: 1300 : 700
hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 700
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 700
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 700 : 257.0
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 700 : 257.0 : +- 3.0
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 700 : 257.0 : +- 3.0 : +- 6.0
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm	: 700 : 257.0 : +- 3.0 : +- 6.0 : 10.0
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 700 : 257.0 : + 3.0 : + 6.0 : 10.0 : 14.0 : 1300
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 700 : 257.0 : +- 3.0 : +- 6.0 : 10.0 : 14.0 : 1300 : 900
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 700 : 257.0 : + 3.0 : + 6.0 : 10.0 : 14.0 : 1300 : 900 : 277.0

H19

Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity cm3/1000 strokes : 0.1

Tolerance

cm3/1000 strokes : +-0.1

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 135.0

Tolerance

cm3/1000 strokes : \leftarrow 10.0

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 170.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 110.0

Tolerance

cm3/1000 strokes : \leftarrow 10.0

Check tolerance

cm3/1000s.: +- 14.0

LOW IDLE

Delivery for standard plunger/barrel assemblies.

Zero delivery for shutoff assemblies (refer to cam sequence).

Rated speed rpm : 300 Rack travel in mm : 6.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 45.0

Tolerance

cm3/1000 strokes : +- 5.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.06.97 : ISO 4113

Combination No. : 0 402 640 839

Injection pump

Pump designation : PE12P12OA520LS7829

: -1

EP type number : 0 412 620 827

Governor

Governer design. : RQV300...1150PA1039K

Governer no.

: 0 421 815 314

Cust. part No. : 3-7227

Customer-spec. information

Customer

: MAN

Motor

: D2842LE402

Power KW

: 809.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55 Tolerance mm : ÷- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 12-1A- 5- 9A- 8

: - 3A- 4-11A- 10

= 2A - 6

: 0-45-60-105-120 Phasing

: -165-130-225-240

: -285-300-345

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : \leftarrow 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.55

Tolerance mm : + 0.05

H21

Del. quantity cm3/1000 strokes : 338.0	+ Tolerance mm : +- 0.25 + Rated speed rpm : 379
Tolerance cm3/1000 strokes : +- 1.0	guide sleeve + travel mm : 3.53
Check tolerance cm3/1000s. : +- 4.0	Tolerance mm : +- 0.25 Rated speed rpm : 450
Spreed	guide sleeve + travel mm : 4.21
·	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1450 guide sleeve
Check tolerance	travel mm : 13.50 Tolerance mm : +- 0.50
cm3/1000s. : 9.0	+ Tolerance mm : +- 0.50
	CHIEF S. FEVE POSITION
Rated speed rpm : 300	GUIDE SLEEVE POSITION
Rack travel in mm : 6.80	control lever
Tolerance mm : +- 0.10	+ position degree : -1
Del. quantity cm3/1000 strokes : 45.0	+ Rated speed rpm : 1265
Tolerance	Rack travel in mm: 13.70
cm3/1000 strokes : +- 5.0	+ Tolerance mm : +- 2.00
Check tolerance cm3/1000s. : +- 8.0	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 8.0	+ Rated speed rpm : 1150
Check tolerance	+ Aneroid pressure
cm3/1000s. : 12.0	+ hPa : 1500 - Del. quantity
	+ cm3/1000 strokes : 338.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance + cm3/1000 strokes : +- 1.0
WITH GOVERNOR	Check tolerance
	- + cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL	+ Spreed + Tolerance
Rated speed rpm : 1206	+ cm3/1000 strokes : 5.0
guide sleeve	† Check tolerance
travel mm : 10.43 Tolerance mm : + 0.25	
	+
Rated speed rpm : 300	CONTROL EVER
guide sleeve travel mm : 2.24	CONTROL LEVER
Tolerance mm : +- 0.25	control lever
Rated speed rpm : 795	position degree : 120.0
Rated speed rpm : 795 guide sleeve	+ tolerance degree : +- 4.0
travel mm : 6.88	RATED SPEED
Tolerance mm : + 0.25	rack travel mm : 13.50 Rated speed rpm : 1203
Rated speed rpm : 329	+ Rated speed rpm : 1203 + Tolerance 1/min : + 8
guide sleeve	+
travel mm : 2.75	+ rack travel mm : 4.00

H22

Rated speed rpm Tolerance 1/min rack travel mm	: +- 15 : 0.50	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	• 1500
Tolerance mm Rated speed rpm		Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1150 : - : 9.70
LOW IDLE		+ MEASUREMENT	
		+ Rated speed rpm	. 1150
control lever		+	
position degree tolerance degree	: +- 4.0	Pressure hPa rack travel mm Tolerance mm	: 12.25
Setting point w/o		Pressure hPa	: 400
Rated speed rpm	: 200	rack travel mm Tolerance mm	: 10.05
CRT mm min.	: > 8.30	İ	
Testing:		3tart interlock	
Rated speed rpm rack travel mm Tolerance mm	: 6.80	Rated speed rpm Rated speed rpm	
Rated speed rpm	: 330	+ Check + speed 1/min + Check	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 14.55	speed 1/min	
Rated speed rpm rack travel mm Tolerance mm	: 13.30	Aneroid pressure hPa Rated speed rpm Del. quantity	: 1500 : 700
Rated speed rpm rack travel mm Tolerance mm	: 14.10	cm3/1000 strokes Tolerance cm3/1000 strokes	
Rated speed rpm rack travel mm Tolerance mm	: 6.90	Check tolerance cm3/1000s. Spreed Tolerance	: +- 6.0
Rated speed rpm rack travel mm Tolerance mm	: 8.10	cm3/1000 strokes Check tolerance cm3/1000s.	: 10.0 : 14.0
ANEROID/ALTITUDE COMPENSATOR TEST		Aneroid pressure hPa Rated speed rpm Del. quantity	
SETTING		cm3/1000 strokes Tolerance cm3/1000 strokes	

Check tolerance cm3/1000s. 6.0

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

hPa Rated speed rpm 500 Del. quantity

cm3/1000 strokes : 0.1

Tolerance

cm3/1000 strokes : + 0.1

Check tolerance

cm3/1000s. 0.1

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger

barrel assemblies.

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity cm3/1000 strokes : 135.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

: +~ 10.0 cm3/1000s.

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 170.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +-

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.: 12.0

STARTING FUEL DELIVERY

100 Rated speed rpm rack travel mm : 19,60 Tolerance mm : +- 1.40

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Delivery for standard plunger/barrel assemblies.

Zero delivery for shutoff assemblies (refer to cam sequence).

300 Rated speed rpm :

Rack travel in mm : 6.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 45.0

Tolerance

cm3/1000 strokes : +- 5.0

Check tolerance

cm3/1000s. : +-

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.06.97 Test oil : 19.06.97

Combination No. : 0 402 646 609

Injection pump

Pump designation : PE6P12OA72ORS7188

: -10

EP type number : 0 412 626 924

Governor

Governer design: : RQV200...950PA725

: -11

Governer no. : 0 421 814 033

Cust. part No. : 1340418

Customer-spec. information Customer : SCANIA : DSC 11 36 Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C Tolerance *C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity min. l/h : 230 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-130-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

H25

		+	
BASIC SETTING		FULL LOAD DELIVERY	AT FULL LOAD STOP
Rated speed rpm	: 700	Rated speed rpm Aneroid pressure	: 700
Rack travel in mm Tolerance mm	: 13.85 : +- 0.05	hPa Del. quantity cm3/1000 strokes	: - : 252.0
Del. quantity		Tolerance cm3/1000 strokes	
cm3/1000 strokes Tolerance	: 252.0	+ Check tolerance + cm3/1000s. + Spreed	: ← 4.0
cm3/1000 strokes	: +- 1.0	Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: +- 4.0	Check tolerance cm3/1000s.	: 12.0
Spreed		<u> </u>	
Tolerance cm3/1000 strokes	: 8.0	CONTROL LEVER	
Check tolerance		<pre>control lever position degree</pre>	• 62.0
cm3/1000s.	: 12.0	tolerance degree	
		<pre>control lever position degree</pre>	: 116.0
Rated speed rpm	: 250	tolerance degree	
Rack travel in mm Tolerance mm	: 4.70 : +- 0.10	RATED SPEED rack travel mm	: 12.80
Del. quantity cm3/1000 strokes Tolerance	: 17.0	Rated speed rpmTolerance 1/minCheck	: 995 : +- 5
cm3/1000 strokes Check tolerance		speed 1/min	: +- 10 : 4.00
cm3/1000s. Spreed Tolerance	: +- 6.0	rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1125 : +- 15
cm3/1000 strokes Check tolerance		Check speed 1/min	: +- 20
cm3/1000s.	: 8.0	rack travel mm Tolerance mm	: 0.50 : +- 0.50
(B) SETTING OF INU WITH GOVERNOR	ECTION PUMP	Rated speed rpm	: 1250
GUIDE SLEEVE POSIT	TON	LOW IDLE	
		‡	
control lever position degree Rated speed rpm	: - 1 : 1150	control lever position degree tolerance degree	
Rack travel in mm Tolerance mm		control lever position degree	: 10.0

H26

: +- 4.0		
nt bumper spring	Rated speed rpm	950
: 150	+ cm3/1000 strokes	: 237.0
: > 6.00	+ cm3/1000 strokes	: +- 4.0
	cm3/1000s.	: +- 6.0
: 250 : 4.70 : + 0.10	Aneroid pressure	: : 500
: 270	Del. quantity	
200	Tolerance cm3/1000 strokes	
: 13.85 : +- 0.05	cm3/1000s.	: +- 4.0
: 950 : 13.85 : +- 0.05	STARTING FUEL DE	
	+ Rated speed rpm	: 100 : 9.30
	Tolerance mm	: +- 0.20
	Del. quantity	. 5125
	+ cm3/1000 strokes	: 125.0
	Tolerance	
	1	: +- 20.0
• 500		: +- 24.0
	1 (11137 (00003)	24.0
: 13.85	1	
: +- 0.05	+	
: 500	LOW IDLE	
0.70	Poted aroud non	. 250
: +- 0.20	+ kated speed rpm	: 250
	Rack travel in m	n: 4.70
	Tolerance mm	: +- 0.10
500		47.0
: 500	1	: 17.0
: 375		; 3.0
: 12.05	- Check tolerance	
: + 0.05	cm3/1000s. Spreed	: ← 6.0
: 185	+ Tolerance	
		: 4.0
0.13	cm3/1000s.	: 8.0
	T	
	: 150 : > 6.00 : 250 : 4.70 : + 0.10 : 270 : 700 : 13.85 : + 0.05 : 950 : 13.85 : + 0.05 : 950 : 13.85 : + 0.05 : 500 : 13.85 : + 0.05 : 500 : 13.85 : + 0.05	hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes check tolerance cm3/1000 strokes check tolerance cm3/1000 strokes check tolerance cm3/1000 strokes check tolerance cm3/1000 strokes check tolerance cm3/1000 strokes check tolerance cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes cm3/1000 strokes

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.06.97 : 19.06.97 : ISO 4113

Combination No. : 0 402 646 613

Injection pump

Pump designation : PE6P120A320RS7248

: -10W

EP type number : 0 412 626 908

Governor

Governer design. : RQ275/1150PA987

Governer no. : 0 421 801 578

Cust. part No. : 1278684/3

Customer-spec, information

Customer : DAF

Motor

: RS 180 M

Power KW

: 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

har

: 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 089

x length mm : 600

Outside diameter : 8.0

x inside diameter: 3.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00

Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +~ 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 10.75

Tolerance mm : \leftarrow 0.05

	+ Tolerance mm : +- 0.10
Del. quantity cm3/1000 strokes : 154.0	+ Rated speed rpm : 440 + guide sleeve
Tolerance cm3/1000 strokes : +- 1.0	travel mm : 6.00 Tolerance mm : + 0.10
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1360 guide sleeve
Spreed	travel mm : 11.50 Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes : 5.0	GUIDE SLEEVE FOSITION
Check tolerance : 9.0	control lever position degree : - 1 Rated speed rpm : 550
Rack travel in mm : 4.90 Tolerance mm : +- 0.10	Rack travel in mm : 15.80 Tolerance mm : +- 0.60
Del. quantity cm3/1000 strokes : 16.0 Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOR
cm3/1000 strokes : +- 3.0 Check tolerance	Aneroid pressure
cm3/1000s. : +- 6.0 Spreed	Del. quantity cm3/1000 strokes : 154.0
Tolerance cm3/1000 strokes : 8.0 Check tolerance	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : 12.0	- cm3/1000s. : +- 4.0 - Spreed
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	+
Rated speed rpm : 1205 guide sleeve	CONTROL LEVER
travel mm : 6.51 Tolerance mm : + 0.10	<pre>+ control lever + position degree : 99.0 + tolerance degree : +- 4.0</pre>
Rated speed rpm : 275 guide sleeve	+ RATED SPEED
travel mm : 1.95 Tolerance mm : +- 0.10	rack travel mm : 9.75 Rated speed rpm : 1192 Tolerance 1/min : +- 8
Rated speed rpm : 1150 guide sleeve	rack travel mm : 4.00
travel mm : 6.00 Tolerance mm : + 0.10	Rated speed rpm : 1265 Tolerance 1/min : + 15
Rated speed rpm : 351 guide sleeve	rack travel mm : 0.70 Tolerance mm : +- 0.70
travel mm : 4.27	+ Rated speed rpm : 1450

LOW IDLE

control lever

position degree : 74.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. :> 7.60

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : +- 20

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 10.75 Tolerance mm : + 0.05

Rated speed rpm : 1150 rack travel mm : 10.75 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : + 0.05

Rated speed rpm : 600
Pressure hPa : rack travel mm : 9.50
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 300 rack travel mm : 10.45

Tolerance mm : +- 0.05

Pressure hPa : 240 rack travel mm : 10.00 Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : ~ Del. quantity

cm3/1000 strokes : 122.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

LOW IDLE

Rack travel in mm : 4.90 Tolerance mm : +- 0.10 Del. quantity

cm3/1000 strokes : 16.0 Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.06.97 Test oil : ISO 4113

Combination No. : 0 402 646 614

Injection pump

Pump designation : PE6P120A320RS7248

: -10W

EP type number : 0 412 626 908

Governor

Governer design. : RQV275...1150PA986

Governer no. : 0 421 813 920

Cust. part No. : 1280139/3

Customer-spec. information

Customer : DAF
Motor : RS 180 M

Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 130 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : G-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance $^{\circ}NW$: \leftarrow 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

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| Rack travel in m                                                                                                                                                                                                                                                                                                        | . 10 75                                                                                    | t Dated aread are . 715                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tolerance mm                                                                                                                                                                                                                                                                                                            |                                                                                            | + Rated speed rpm : 315<br>+ guide sleeve                                                                                                                                                                                                                                                                                     |
| TOCCE OF ICC TIME                                                                                                                                                                                                                                                                                                       | 0.09                                                                                       | travel mm : 1.98                                                                                                                                                                                                                                                                                                              |
| Del. quantity                                                                                                                                                                                                                                                                                                           |                                                                                            | Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                                                        |
| cm3/1000 strokes                                                                                                                                                                                                                                                                                                        | : 154.0                                                                                    | +                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                         |                                                                                            | + Rated speed rpm : 365                                                                                                                                                                                                                                                                                                       |
| Tolerance                                                                                                                                                                                                                                                                                                               |                                                                                            | + guide sleeve                                                                                                                                                                                                                                                                                                                |
| cm3/1000 strokes                                                                                                                                                                                                                                                                                                        | : <del></del> 1.0                                                                          | travel mm : 2.52                                                                                                                                                                                                                                                                                                              |
| Ohnal I las                                                                                                                                                                                                                                                                                                             |                                                                                            | + Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                                                      |
| Check tolerance cm3/1000S.                                                                                                                                                                                                                                                                                              | : +- 4.0                                                                                   | Rated speed rpm : 450                                                                                                                                                                                                                                                                                                         |
| (1107 10003.                                                                                                                                                                                                                                                                                                            | 4.0                                                                                        | guide sleeve                                                                                                                                                                                                                                                                                                                  |
| Spreed                                                                                                                                                                                                                                                                                                                  | -                                                                                          | travel mm : 3.07                                                                                                                                                                                                                                                                                                              |
| -1                                                                                                                                                                                                                                                                                                                      |                                                                                            | + Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                                                      |
| Tolerance                                                                                                                                                                                                                                                                                                               | _                                                                                          | +                                                                                                                                                                                                                                                                                                                             |
| cm3/1000 strokes                                                                                                                                                                                                                                                                                                        | : 5.0                                                                                      | + Rated speed rpm : 1500                                                                                                                                                                                                                                                                                                      |
| Charles - Land                                                                                                                                                                                                                                                                                                          |                                                                                            | + guide sleeve                                                                                                                                                                                                                                                                                                                |
| Check tolerance cm3/1000s.                                                                                                                                                                                                                                                                                              | : 9.0                                                                                      | + travel mm : 11.50<br>+ Tolerance mm : +- 0.50                                                                                                                                                                                                                                                                               |
| CIID/ TUUUS.                                                                                                                                                                                                                                                                                                            | , 7.0                                                                                      | T Total ance min : 7- 0.30                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                         |                                                                                            |                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                         |                                                                                            | + GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                                                       |
| Rated speed rpm                                                                                                                                                                                                                                                                                                         | : 275                                                                                      | +                                                                                                                                                                                                                                                                                                                             |
| Rack travel in mo                                                                                                                                                                                                                                                                                                       |                                                                                            | †                                                                                                                                                                                                                                                                                                                             |
| Toterance mm                                                                                                                                                                                                                                                                                                            |                                                                                            | <pre>+ control lever + position degree : - 1</pre>                                                                                                                                                                                                                                                                            |
| Del. quantity                                                                                                                                                                                                                                                                                                           | . ,                                                                                        | Rated speed rpm : 1350                                                                                                                                                                                                                                                                                                        |
| cm3/1000 strokes                                                                                                                                                                                                                                                                                                        | : 16.0                                                                                     | +                                                                                                                                                                                                                                                                                                                             |
| Tolerance                                                                                                                                                                                                                                                                                                               |                                                                                            | - Rack travel in mm : 9.70                                                                                                                                                                                                                                                                                                    |
| cm3/1000 strokes                                                                                                                                                                                                                                                                                                        | : ← 3.0                                                                                    | † Tolerance mm : +- 1.30                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                         |                                                                                            |                                                                                                                                                                                                                                                                                                                               |
| Check tolerance                                                                                                                                                                                                                                                                                                         |                                                                                            | †                                                                                                                                                                                                                                                                                                                             |
| cm3/1000s.                                                                                                                                                                                                                                                                                                              | : +- 6.0                                                                                   | 500 1 000 050 TUEDY AT 500 1 000 050                                                                                                                                                                                                                                                                                          |
| cm3/1000s.<br>Spreed                                                                                                                                                                                                                                                                                                    | : +- 6.0                                                                                   | FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                                                                                                                                                                          |
| cm3/1000s.<br>Spreed<br>Tolerance                                                                                                                                                                                                                                                                                       |                                                                                            | +                                                                                                                                                                                                                                                                                                                             |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes                                                                                                                                                                                                                                                                            |                                                                                            | Rated speed rpm : 1000                                                                                                                                                                                                                                                                                                        |
| cm3/1000s.<br>Spreed<br>Tolerance                                                                                                                                                                                                                                                                                       |                                                                                            | +                                                                                                                                                                                                                                                                                                                             |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance                                                                                                                                                                                                                                                            | : 8.0                                                                                      | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity                                                                                                                                                                                                                                                                 |
| cm3/1000s.<br>Spreed<br>Tolerance<br>cm3/1000 strokes<br>Check tolerance<br>cm3/1000s.                                                                                                                                                                                                                                  | : 8.0<br>: 12.0                                                                            | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0                                                                                                                                                                                                                                        |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN                                                                                                                                                                                                                              | : 8.0<br>: 12.0                                                                            | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance                                                                                                                                                                                                                              |
| cm3/1000s.<br>Spreed<br>Tolerance<br>cm3/1000 strokes<br>Check tolerance<br>cm3/1000s.                                                                                                                                                                                                                                  | : 8.0<br>: 12.0                                                                            | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 1.0                                                                                                                                                                                                    |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN                                                                                                                                                                                                                              | : 8.0<br>: 12.0                                                                            | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance                                                                                                                                                                                    |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR                                                                                                                                                                                                                 | : 8.0<br>: 12.0<br>NJECTION PUMP                                                           | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0                                                                                                                                                                |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN                                                                                                                                                                                                                              | : 8.0<br>: 12.0<br>NJECTION PUMP                                                           | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance                                                                                                                                                                                    |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm                                                                                                                                                                              | : 8.0<br>: 12.0<br>NJECTION PUMP                                                           | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0                                                                                                                        |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve                                                                                                                                                                 | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206                                          | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance                                                                                            |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm                                                                                                                                                       | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206<br>: 8.24                                | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0                                                                                                                        |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve                                                                                                                                                                 | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206                                          | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance                                                                                            |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm Tolerance mm                                                                                                                                          | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206<br>: 8.24<br>: + 0.25                    | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance                                                                                            |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm                                                                                                                          | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206<br>: 8.24                                | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000 strokes : 9.0                                                                     |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm Tolerance mm                                                                                                                                          | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206<br>: 8.24<br>: + 0.25                    | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance                                                                                            |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve                                                                                                            | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206<br>: 8.24<br>: + 0.25<br>: 275           | Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER control lever                                                    |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm                                                                         | : 8.0<br>: 12.0<br>NJECTION PUMP  VEL  : 1206  : 8.24 : + 0.25 : 275 : 1.44 : + 0.25       | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000s. : 9.0  CONTROL LEVER  control lever  position degree : 118.0                   |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm                               | : 8.0<br>: 12.0<br>NJECTION PUMP<br>VEL<br>: 1206<br>: 8.24<br>: + 0.25<br>: 275<br>: 1.44 | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000 strokes : 9.0  Check tolerance  cm3/1000s. : 9.0                                 |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve | : 8.0<br>: 12.0<br>NJECTION PUMP  VEL  : 1206  : 8.24 : + 0.25 : 275 : 1.44 : + 0.25 : 799 | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity cm3/1000 strokes : 154.0  Tolerance cm3/1000strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : +- 4.0 |
| cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm                                  | : 8.0<br>: 12.0<br>NJECTION PUMP  VEL  : 1206  : 8.24 : + 0.25 : 275 : 1.44 : + 0.25       | Rated speed rpm : 1000  Aneroid pressure  hPa : -  Del. quantity  cm3/1000 strokes : 154.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000 strokes : 9.0  CONTROL LEVER  control lever  position degree : 118.0             |

| Rated speed rpm<br>Tolerance 1/min                                  |                                         |
|---------------------------------------------------------------------|-----------------------------------------|
| rack travel mm<br>Rated speed rpm<br>Tolerance 1/min                | : 4.00<br>: 1290<br>: +- 15             |
| rack travel mm<br>Tolerance mm<br>Rated speed rpm                   | : 0.70<br>: +- 0.70<br>: 1450           |
| LOW IDLE                                                            |                                         |
| control lever<br>position degree<br>tolerance degree                | : 82.0<br>: + 4.0                       |
| Setting point w/c                                                   | out bumper spring                       |
| Rated speed rpm                                                     | : 175                                   |
| CRT mm min.                                                         | : > 7.40                                |
| Testing:                                                            |                                         |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 275<br>: 4.90<br>: +- 0.10            |
| Rated speed rpm                                                     | : 340                                   |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 1000<br>: 10.75<br>: +- 0.05          |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 1150<br>: 10.75<br>: ← 0.10           |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                                |                                         |
| SETTING                                                             |                                         |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 600<br>: 1000<br>: 10.75<br>: +- 0.05 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm                   | : 600<br>: 300<br>: 10.45               |

J06

| Talananaa mm                                      | 0.05                          |
|---------------------------------------------------|-------------------------------|
| Tolerance mm                                      | : +- 0.05                     |
| MEASUREMENT                                       |                               |
| Rated speed rpm                                   | : 600                         |
| Pressure hPa<br>rack travel mm<br>Tolerance mm    | : -<br>: 9.50<br>: +- 0.10    |
| Pressure hPa<br>rack travel mm<br>Tolerance mm    | : 240<br>: 10.00<br>: +- 0.10 |
| FUEL DELIVERY CHAR                                | RACTERISTICS                  |
| Aneroid pressure                                  | <del></del>                   |
| hPa<br>Rated speed rpm                            | : -<br>: 600                  |
| Del. quantity cm3/1000 strokes                    | : 122.5                       |
| Tolerance cm3/1000 strokes                        | : +- 1.0                      |
| Check tolerance cm3/1000s.                        | : +- 4.0                      |
| LOW IDLE                                          |                               |
| Rated speed rpm                                   | : 275                         |
| Rack travel in mm<br>Tolerance mm                 | : 4.90<br>: +- 0.10           |
| Del. quantity cm3/1000 strokes                    | : 16.0                        |
| Tolerance cm3/1000 strokes                        | : +- 3.0                      |
| Check tolerance cm3/1000s.                        | : +- 6.0                      |
| Spreed Tolerance cm3/1000 strokes Check tolerance | : 8.0                         |
| cm3/1000s.                                        | : 12.0                        |
| Check tolerance                                   |                               |
|                                                   |                               |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.06.97 : ISO 4113 Test oil

Combination No. : 0 402 646 619

Injection pump

Pump designation: PE6P12OA72ORS7188

: -100

EP type number : 0 412 626 925

Governor

Governer design. : RQV200...950PA725

: -11

: 0 421 814 033 Governer no.

Cust. part No. : 1340417

Customer-spec. information Customer : SCANIA

: DSC 11 35 Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. \*C : 40
Tolerance \*C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Tolerance l/h: + 10.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

|                                     | +                     | Rated speed rpm : 1250                           |
|-------------------------------------|-----------------------|--------------------------------------------------|
| Rated speed rpm                     | : 250                 | Traced opeca i piir . Teso                       |
| Rack travel in mm<br>Tolerance mm   |                       |                                                  |
| Del. quantity cm3/1000 strokes      | : 17.0                | LOW IDLE                                         |
| Tolerance<br>cm3/1000 strokes       | : + 3.0               | control lever                                    |
| Check tolerance cm3/1000s. Spreed   | : +- 6.0              | position degree : 64.0 tolerance degree : +- 4.0 |
| Tolerance<br>cm3/1000 strokes       | . 40                  | control lever position degree : 10.0             |
| Check tolerance cm3/1000s.          | +                     | tolerance degree : +- 4.0                        |
|                                     | +                     | Setting point w/out bumper spring                |
| (B) SETTING OF IN<br>WITH GOVERNOR  | JECTION PUMP +        | Rated speed rpm : 150                            |
|                                     | ‡                     | CRT mm min. :> 6.00                              |
| GUIDE SLEEVE POSI                   | TION                  | Testing:                                         |
|                                     | +                     | Rated speed rpm : 250                            |
| control lover                       | †                     | rack travel mm : 4.70                            |
| control lever<br>position degree    | · - 1                 | Tolerance mm : +- 0.10                           |
| Rated speed rpm                     | : 1150                | Rated speed rpm : 250                            |
| Rack travel in mm<br>Tolerance mm   |                       | TORQUE CONTROL                                   |
|                                     | 1                     | Rated speed rpm : 950                            |
|                                     | <del></del> +         | rack travel mm : 12.75                           |
| CONTROL LEVER                       | +                     | Tolerance mm : +- 0.05                           |
| control lever                       | +                     |                                                  |
| position degree<br>tolerance degree | : 62.0 +<br>: + 4.0 + | ANEROID/ALTITUDE<br>COMPENSATOR TEST             |
| control lever                       | +                     |                                                  |
| position degree<br>tolerance degree | : 116.0<br>: + 4.0    | SETTING                                          |
| DATES 02701                         | +                     | Rated speed rpm : 500                            |
| RATED SPEED                         | . 11 70               | Pressure hPa : 1500                              |
| rack travel mm                      |                       | rack travel mm : 12.75 Tolerance mm : +- 0.05    |
| Rated speed rpm<br>Tolerance 1/min  |                       | Tolerance mm : +- 0.05                           |
| Check                               | I                     | Rated speed rpm : 500                            |
| speed 1/min                         | : +- 10               | Pressure hPa : -                                 |
| reserved transfer                   | <u> </u>              | rack travel mm : 9.30                            |
| rack travel mm                      |                       | Tolerance mm : +- 0.20                           |
| Rated speed rpm                     | : 1110 +              |                                                  |
| Tolerance 1/min                     | : + 15 +              | MEASUREMENT                                      |
| Check                               | +                     | Date I award www. 500                            |
| speed 1/min                         | : + 20                | Rated speed rpm : 500                            |
| rack travel mm                      | : 0.50                | Pressure hPa : 185                               |
| Toterance mm                        | : +- 0.50 +           | rack travel mm : 11.00                           |

J08

Tolerance mm : +- 0.15 Pressure hPa : 375 rack travel mm : 12.05 : +- 0.05 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1500 hPa Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 209.0 Tolerance cm3/1000 strokes : +- 4.0Check tolerance cm3/1000s.: +- 6.0 Aneroid pressure hPa 500 Rated speed rpm : Del. quantity cm3/1000 strokes : 115.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 9.30 : +- 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 125.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance : +- 24.0 cm3/1000s. LOW IDLE Rated speed rpm : 250 Rack travel in mm : 4.70

Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 8.0

End of test specification sheet

Del. quantity

Tolerance

Tolerance mm : +- 0.10

cm3/1000 strokes : 17.0

cm3/1000 strokes : +- 3.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.06.97 Test oil : ISO 4113

Combination No. : 0 402 646 624

Injection pump

Pump designation : PE6P12OA32ORS7299 EP type number : 0 412 626 885

Governor

Governer design. : RQV275...1000PA1075K

Governer no. : 0 421 815 356

Cust. part No. : 1280155

Customer—spec. information Customer : DAF

Motor : WS 295 M Power KW : 295.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.85
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.35

Tolerance mm : +- 0.05

| Del. quantity<br>cm3/1000 strokes : 279.0           | + Tolerance mm : +- 0.25<br>+ Rated speed rpm : 334                           |
|-----------------------------------------------------|-------------------------------------------------------------------------------|
| Tolerance cm3/1000 strokes : +- 1.0                 | guide sleeve travel mm : 3.17 Tolerance mm : + 0.25                           |
| Check tolerance cm3/1000S. : +- 4.0                 | + Rated speed rpm : 390                                                       |
| Spreed                                              | <pre>+ guide sleeve<br/>+ travel mm : 3.79<br/>+ Tolerance mm : +- 0.25</pre> |
| Tolerance<br>cm3/1000 strokes : 5.0                 | + Pated speed rpm : 1310                                                      |
| Check tolerance cm3/1000S. : 9.0                    | guide sleeve<br>travel mm : 13.50<br>Tolerance mm : +- 0.50                   |
| Rated speed rpm : 275                               | GUIDE SLEEVE POSITION                                                         |
| Rack travel in mm: 4.80 Tolerance mm: +- 0.10       | control lever position degree : - 1                                           |
| Del. quantity<br>cm3/1000 strokes : 17.0            | - Rated speed rpm : 1135                                                      |
| Tolerance cm3/1000 strokes : +- 3.0 Check tolerance | + Rack travel in mm : 13.60<br>+ Tolerance mm : +- 1.30                       |
| cm3/1000S. : +- 6.0<br>Spreed                       | FULL LOAD DELIVERY AT FULL LOAD STOP                                          |
| Tolerance cm3/1000 strokes : 8.0 Check tolerance    | + Rated speed rpm : 980<br>+ Aneroid pressure                                 |
| cm3/1000s. : 12.0                                   | + hPa : -<br>Del. quantity                                                    |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR         | + cm3/1000 strokes : 279.0<br>+ Tolerance<br>+ cm3/1000 strokes : +- 1.0      |
| GUIDE SLEEVE TRAVEL                                 | + Check tolerance<br>- cm3/1000s. : + 4.0<br>- Spreed                         |
| Rated speed rpm : 1046<br>guide sleeve              | + Tolerance<br>+ cm3/1000 strokes : 5.0<br>+ Check tolerance                  |
| travel mm : 9.83 Tolerance mm : + 0.20              | cm3/1000s. : 9.0                                                              |
| Rated speed rpm : 275 guide sleeve                  | CONTROL LEVER                                                                 |
| travel mm : 2.14 Tolerance mm : + 0.15              | control lever position degree : 121.0                                         |
| Rated speed rpm : 689 guide sleeve                  | tolerance degree : + 4.0                                                      |
| travel mm : 6.43 Tolerance mm : +- 0.25             | + RATED SPEED<br>+ rack travel mm : 13.45<br>+ Rated speed rpm : 1032         |
| Rated speed rpm : 284<br>guide sleeve               | Tolerance 1/min : + 5                                                         |
| travel mm : 2.27                                    | + rack travel mm : 4.00                                                       |

| Rated speed rpm<br>Tolerance 1/min                                  | : 1160<br>: + 15              |
|---------------------------------------------------------------------|-------------------------------|
| rack travel mm<br>Tolerance mm<br>Rated speed rpm                   | : 0.70<br>: +- 0.70<br>: 1275 |
| LOW IDLE                                                            |                               |
| control lever<br>position degree<br>tolerance degree                | : 74.0<br>: +- 4.0            |
| Setting point w/o                                                   | ut bumper spring              |
| Rated speed rpm                                                     | : 175                         |
| CRT mm min.                                                         | : > 7.80                      |
| Testing:                                                            |                               |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 275<br>: 4.80<br>: + 0.10   |
| Rated speed rpm                                                     | : 275                         |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 980<br>: 14.35<br>: + 0.05  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 750<br>: 13.70<br>+ 0.05    |
| Rated speed rpm<br>rack travel mm<br>Tolarance mm                   | : 600<br>: 12.80<br>: + 0.10  |
| Reted speed rpm<br>rack travel mm<br>Folerance mm                   | : 500<br>: 12.50<br>: + 0.10  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 980<br>: 14.50<br>: + 0.10  |

| : 980<br>: 1500<br>: 14.35<br>: +- 0.05 |
|-----------------------------------------|
| : 980<br>: -<br>: 8.90<br>: +- 0.10     |
|                                         |
| : 980                                   |
| : 840<br>: 13.25<br>: +- 0.05           |
| : 430<br>: 10.40<br>: +- 0.10           |
|                                         |

| FUEL DELIVERY CHARACTERISTICS |
|-------------------------------|
|-------------------------------|

| <del></del>      |      |       |
|------------------|------|-------|
| Aneroid pressure |      |       |
| hPa              | :    | _     |
| Rated speed rpm  | :    | 750   |
| Del. quantity    |      |       |
| cm3/1000 strokes | :    | 284.0 |
| Tolerance        |      |       |
| cm3/1000 strokes | : +- | - 2.0 |
| Check tolerance  |      |       |
| cm3/1000s.       | : +- | - 5.0 |
| Spreed           |      |       |
| Tolerance        |      |       |
| cm3/1000 strokes | :    | 8.0   |
| Check tolerance  |      |       |
| cm3/1000s.       | :    | 12.0  |
|                  |      |       |
| Aneroid pressure |      |       |
| hPa              | •    | -     |
| Rated speed rpm  | :    | 600   |
| Del. quantity    | •    | 550   |
| ver. quantity    |      |       |

hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 172.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 4.0

LOW IDLE

| Rated speed rpm                                    | :         | 275          |
|----------------------------------------------------|-----------|--------------|
| Rack travel in mm<br>Tolerance mm<br>Del. quantity | :<br>: +- | 4.80<br>0.10 |
| cm3/1000 strokes                                   | :         | 17.0         |
| Tolerance<br>cm3/1000 strokes<br>Check tolerance   | : +-      | 3.0          |
| cm3/1000s.                                         | : +-      | 6.0          |
| Tolerance                                          |           | 0.0          |
| cm3/1000 strokes<br>Check tolerance                | :         | 8.0          |
| cm3/1000s.                                         | :         | 12.0         |
|                                                    |           |              |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.06.97 : ISO 4113

Combination No. : 0 402 646 630

Injection pump

Pump designation : PE6P12OA72ORS7302

: -10

EP type number : 0 412 626 928

Governor

Governer design. : RQ200/950PA745-6

Governer no. : 0 421 801 702

Cust. part No. : 1354204

Customer-spec. information Customer : SCANIA : DS 11 78 Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C Tolerance \*C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.00 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance  $^{\circ}NW$  : +- 0.75

Start of delivery mark

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

| Rack travel in mm: 13. Tolerance mm: + 0.  Del. quantity cm3/1000 strokes: 171  Tolerance cm3/1000 strokes: + 1                                                                                   | .05 + gr<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | uide sleeve<br>ravel mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 350<br>2.88                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| cm3/1000 strokes : 171 Tolerance                                                                                                                                                                  | 1.0 + To                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2.00                                                              |
|                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | +- 0.10                                                           |
|                                                                                                                                                                                                   | 1.0 + g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4.50                                                              |
| Check tolerance cm3/1000s. : +- 4                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | olerance mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | +- 0.10<br>1045                                                   |
| Spreed                                                                                                                                                                                            | + t                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | uide sleeve<br>ravel mm :<br>olerance mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5.50<br>+- 0.10                                                   |
| Tolerance<br>cm3/1000 strokes : 8                                                                                                                                                                 | 3.0 + R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                   |
| Check tolerance cm3/1000s. : 12                                                                                                                                                                   | + t                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 11.50<br>+- 0.50                                                  |
| Rated speed rpm : 250                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NC                                                                |
| Rack travel in mm: 4. Tolerance mm: 0. Del. quantity cm3/1000 strokes: 16 Tolerance cm3/1000 strokes: +- 3 Check tolerance cm3/1000s. : +- 6 Spreed Tolerance cm3/1000 strokes: 4 Check tolerance | 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 + R. 3.0 | control lever cosition degree : cated speed rpm : cack travel in mm : colerance mm : cull LOAD DELIVERY cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm : cated speed rpm | 600<br>16.50<br>+- 1.30<br>AT FULL LOAD STOP<br>700<br>-<br>171.0 |
| GUIDE SLEEVE TRAVEL                                                                                                                                                                               | + s₁                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>←</b> 4.0                                                      |
| Tolerance mm : +- 0.                                                                                                                                                                              | 5 + cl<br>+ Cl<br>.88 + cl<br>.15 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Tolerance<br>cm3/1000 strokes :<br>check tolerance<br>cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8.0<br>12.0                                                       |
| Rated speed rpm : 250                                                                                                                                                                             | <b>1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                   |

| control lever                                                                                                                                                                    | ‡                                                                                                                | Tolerance mm : +- 0                                                                                                                                                                                                                                                                                                                                  | .10                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| position degree<br>tolerance degree                                                                                                                                              |                                                                                                                  | ANEROID/ALTITUDE COMPENSATOR TEST                                                                                                                                                                                                                                                                                                                    |                     |
| RATED SPEED<br>rack travel mm<br>Rated speed rpm<br>Tolerance 1/min                                                                                                              | : 995 <del> </del>                                                                                               | SETTING                                                                                                                                                                                                                                                                                                                                              |                     |
| Check speed 1/min                                                                                                                                                                | +                                                                                                                | Rated speed rpm : 50 Pressure hPa : 150 rack travel mm : 13                                                                                                                                                                                                                                                                                          | 0<br>3.35           |
| rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min                                                                                                                 | : 1125<br>: +- 15                                                                                                | Tolerance mm: : + 0  Rated speed rpm : 50  Pressure hPa : rack travel mm : 11                                                                                                                                                                                                                                                                        | 0                   |
| rack travel mm<br>Tolerance mm                                                                                                                                                   | : 0.50                                                                                                           | Tolerance mm : +- 0                                                                                                                                                                                                                                                                                                                                  | .20                 |
| Rated speed rpm                                                                                                                                                                  |                                                                                                                  | Rated speed rpm : 50                                                                                                                                                                                                                                                                                                                                 |                     |
| LOW IDLE                                                                                                                                                                         | +                                                                                                                | Pressure hPa : 21<br>rack travel mm : 11<br>Tolerance mm : + 0                                                                                                                                                                                                                                                                                       | .90                 |
| control lever                                                                                                                                                                    | . 64.0                                                                                                           | Pressure hPa : 40 rack travel mm: : 13 Tolerance mm : + 0                                                                                                                                                                                                                                                                                            | . 05                |
| tolerance degree                                                                                                                                                                 | : +- 4.0                                                                                                         | roceratice initi                                                                                                                                                                                                                                                                                                                                     | .05                 |
| tolerance degree control lever position degree tolerance degree                                                                                                                  | : +- 4.0                                                                                                         | FUEL DELIVERY CHARACTERIS                                                                                                                                                                                                                                                                                                                            |                     |
| tolerance degree<br>control lever<br>position degree<br>tolerance degree<br>Setting point w/o                                                                                    | : +- 4.0<br>: 10.0<br>: +- 4.0<br>but bumper spring                                                              | FUEL DELIVERY CHARACTERIS  Aneroid pressure hPa :                                                                                                                                                                                                                                                                                                    | STICS               |
| tolerance degree control lever position degree tolerance degree Setting point w/o Rated speed rpm                                                                                | : +- 4.0<br>: 10.0<br>: +- 4.0<br>but bumper spring<br>: 150                                                     | FUEL DELIVERY CHARACTERIS  Aneroid pressure hPa : Rated speed rpm : 95 Del. quantity                                                                                                                                                                                                                                                                 | STICS               |
| tolerance degree<br>control lever<br>position degree<br>tolerance degree<br>Setting point w/o                                                                                    | : +- 4.0<br>: 10.0<br>: +- 4.0<br>but bumper spring                                                              | Aneroid pressure hPa : Rated speed rpm : 95 Del. quantity cm3/1000 strokes : 17 Tolerance cm3/1000 strokes : +-                                                                                                                                                                                                                                      | STICS               |
| tolerance degree control lever position degree tolerance degree Setting point w/c Rated speed rpm CRT mm min.                                                                    | : +- 4.0  : 10.0 : +- 4.0  but bumper spring : 150 : > 5.80  : 250                                               | Aneroid pressure hPa : Rated speed rpm : 95 Del. quantity cm3/1000 strokes : 17 Tolerance cm3/1000 strokes : +- Check tolerance cm3/1000s. : +-                                                                                                                                                                                                      | STICS<br>50<br>22.0 |
| control lever position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm                                             | : +- 4.0  : 10.0 : +- 4.0  out bumper spring : 150 : > 5.80  : 250 : 4.50 : +- 0.10 : 2.00 : 335                 | FUEL DELIVERY CHARACTERIS  Aneroid pressure hPa : Rated speed rpm : 95 Del. quantity cm3/1000 strokes : 17 Tolerance cm3/1000 strokes : +- Check tolerance cm3/1000s. : +-  Aneroid pressure hPa : Rated speed rpm : 50 Del. quantity cm3/1000 strokes : 12                                                                                          | 72.0<br>4.0<br>6.0  |
| control lever position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm | : +- 4.0  : 10.0 : +- 4.0  : tubumper spring  : 150 : > 5.80  : 250 : 4.50 : +- 0.10 : 2.00 : 335 : +- 20  : 700 | Aneroid pressure hPa : Rated speed rpm : 95 Del. quantity cm3/1000 strokes : 17 Tolerance cm3/1000 strokes : +- Check tolerance cm3/1000s. : +-  Aneroid pressure hPa : Rated speed rpm : 50 Del. quantity cm3/1000 strokes : 12 Tolerance cm3/1000 strokes : 50 Del. quantity cm3/1000 strokes : 12 Tolerance cm3/1000 strokes : 50 Check tolerance | 22.0<br>4.0<br>6.0  |

| Rated speed rpm  | : 100               |
|------------------|---------------------|
| rack travel mm   | : 20.50             |
| Tolerance mm     | : <b>←</b> 0.50     |
| Del. quantity    |                     |
| cm3/1000 strokes | : 275.0             |
| Tolerance        |                     |
| cm3/1000 strokes | : +- 20.0           |
| Check tolerance  |                     |
| cm3/1000s.       | : <del>←</del> 24.0 |
|                  |                     |

## LOW IDLE

250 Rated speed rpm : Rack cravel in mm : 4.50 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance 8.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.06.97 : ISO 4113

Combination No. : 0 402 646 660

Injection pump

Pump designation : PE6P12OA32ORS7248

: -10v

EP type number : 0 412 626 946

Governor

Governer design. : RQV275...1150PA986

Governer no. : 0 421 813 920

Cust. part No. : 1300727/1

Customer-spec. information

Customer : DAF

Motor

: RT 170 L

Power KW

: 170.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 75
Tolerance l/h : +- 10.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure bar : 208.5 Tolerance bar : + 1.5

J18

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00

Tolerance mm : + 0.50

Firing order : 1-5- 3- 6- 2-

: 0-60-120-180-240 Phasing

: -300

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

|                        |               | + Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rack travel in mr      | . 10 40       | + Rated speed rpm : 309                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Tolerance mm           |               | + Rated speed rpm : 309<br>+ guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Ocerance and           | . +- 0.05     | travel mm : 1.89                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Del. quantity          |               | Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| cm3/1000 strokes       | . 1/4 0       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CIIDA (OOD STI OKES    | . 140.0       | Rated speed rpm : 359                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Tolerance              |               | guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| cm3/1000 strokes       | : +- 1.0      | travel mm : 2.41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| CM37 1000 311 0KE3     | . 1.0         | + Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Check tolerance        |               | T Toterance man . 7- 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cn3/1000S.             | : 4.0         | Rated speed rpm : 450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| (1-10) 10000 t         | • • •••       | guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Spreed                 |               | travel mm : 2.99                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| shi eed                |               | Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Tolerance              |               | Toterance in . 7 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| cm3/1000 strokes       | : 5.0         | Rated speed rpm : 1500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| CIDATOUU STROKES       | . 5.0         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Chark talanna          |               | + guide sleeve<br>+ travel mm : 11.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Check tolerance        |               | T and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second |
| cm3/1000S.             | : 9.0         | Tolerance mm : +- 0.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                        |               | †                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                        |               | CHINE OF ELLE DOCTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Dadad mand             | . 275         | GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Rated speed rpm        | : 273         | †                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| On all Americal during | / 70          | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Rack travel in mr      |               | - control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Tolerance mm           | : +- 0.10     | + position degree : - 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Del. quantity          | 47.0          | Rated speed rpm : 1350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| cm3/1000 strokes       | : 17.0        | †                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Tolerance              | 7.0           | + Rack travel in mm : 9.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| cm3/1000 strokes       | : +- 3.0      | † Tolerance mm : +- 1.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Check tolerance        |               | †                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| cm3/1000S.             | : +- 6.0      | <u> </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Spreed                 |               | + FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Tolerance              |               | +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| cm3/1000 strokes       | : 8.0         | + Rated speed rpm : 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Check tolerance        |               | + Aneroid pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| cm3/1000S.             | : 12.0        | + hPa : 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                        |               | + Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                        |               | + cm3/1000 strokes : 146.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (B) SETTING OF IN      | NJECTION PUMP | + Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| WITH GOVERNOR          |               | + cm3/1000 strokes : + 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                        |               | + Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                        |               | + cm3/1000s. : +- 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| GUIDE SLEEVE TRAN      | VEL           | + Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                        |               | + Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Rated speed rpm        | : 1210        | + cm3/1000 strokes : 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| guide sleeve           |               | + Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| travel mm              | : 8.26        | + cm3/1000s. : 9.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Tolerance mm           | : +- 0.15     | +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| · eer wire er inne     |               | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Rated speed rpm        | : 275         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| guide sleeve           |               | + CONTROL LEVER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| travel mm              | : 1.44        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Tolerance mm           | · +- 0.20     | ↓         control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| . O COT GITTO TIME     |               | position degree : 118.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Rated speed rpm        | : 805         | tolerance degree : +- 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| guide sleeve           | . 555         | ± total difference of the total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| travel mm              | : 5.21        | T RATED SPEED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| rease ( min            | : 5.21        | T MILL SPECE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| rack travel mm<br>Rated speed rpm<br>Tolerance 1/min              | : 9.60<br>: 1200<br>: +- 5                                                                                     |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| rack travel mm<br>Rated speed rpm<br>Tolerance 1/min              | : 1290                                                                                                         |
| rack travel mm<br>Tolerance mm<br>Rated speed rpm                 | : 0.70<br>: +- 0.70<br>: 1450                                                                                  |
| LOW IDLE                                                          |                                                                                                                |
| control lever<br>position degree<br>tolerance degree              | : 82.0<br>: + 4.0                                                                                              |
| Setting point w/o                                                 | ut bumper spring                                                                                               |
| Rated speed rpm                                                   | : 175                                                                                                          |
| CRT mm min.                                                       | : > 7.00                                                                                                       |
| Testing:                                                          |                                                                                                                |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                 | : 275<br>: 4.70<br>: +- 0.10                                                                                   |
| Rated speed rpm                                                   | : 330                                                                                                          |
| TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm        | : 1000<br>: 10.60<br>: + 0.05                                                                                  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                 | : 1150<br>: 10.60<br>: +- 0.10                                                                                 |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                              | angunan di Palikana dan geraka dan di Palikana dan di Palikana dan di Palikana dan dan dan dan dan dan dan dan |
| SETTING                                                           |                                                                                                                |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm | : 600<br>: 1000<br>: 10.60<br>: +- 0.05                                                                        |
| Rated speed rpm<br>Pressure hPa                                   | : 600<br>: -                                                                                                   |
|                                                                   |                                                                                                                |

| rack travel mm<br>Tolerance mm                 | :<br>: +-      | 9.50<br>0.10         |
|------------------------------------------------|----------------|----------------------|
| MEASUREMENT                                    |                |                      |
| Rated speed rpm                                | :              | 600                  |
| Pressure hPa<br>rack travel mm<br>Tolerance mm | :<br>:<br>: +- | 250<br>10.30<br>0.05 |
| Pressure hPa<br>rack travel mm<br>Tolerance mm | :<br>:<br>: +  | 190<br>9.80<br>0.10  |
| FUEL DELIVERY CHA                              | RACTE          | RISTICS              |
| Aneroid pressure<br>hPa<br>Rated speed rpm     | :              | -<br>600             |

| hPa              | : |    | -     |
|------------------|---|----|-------|
| Rated speed rpm  | : |    | 600   |
| Del. quantity    |   |    |       |
| cm3/1000 strokes | : |    | 122.5 |
| Tolerance        |   |    |       |
| cm3/1000 strokes | : | +- | 1.0   |
| Check tolerance  |   |    |       |
| cm3/1000s.       | : | +- | 4.0   |
|                  |   |    |       |
|                  |   |    |       |

| LOW IDLE                                         |      |                      |  |
|--------------------------------------------------|------|----------------------|--|
| Rated speed rpm                                  | :    | 275                  |  |
| Del. quantity cm3/1000 strokes                   | : +- | 4.70<br>0.10<br>17.0 |  |
| Tolerance<br>cm3/1000 strokes<br>Check tolerance | : +- | 3.0                  |  |
| cm3/1000s.<br>Spreed<br>Tolerance                | : +- | 6.0                  |  |
| cm3/1000 strokes<br>Check tolerance              | :    | 8.0                  |  |
| cm3/1000s.                                       | :    | 12.0                 |  |
|                                                  |      |                      |  |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.06.97 : ISO 4113

Combination No. : 0 402 646 668

Injection pump

Pump designation : PE6P12OA32ORS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278

: -1K

Governer no.

: 0 421 815 510

Cust. part No. : 1310220/1

Customer-spec. information

Customer : DAF

Motor

: XF 280 M : 280.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 145 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

: +- 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

: +- 0.75 tolerance °NW

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*\*\* : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

J21

| Tolerance mm : +- 0.05                                                   | guide sleeve<br>travel mm : 3.92                                      |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Del. quantity - cm3/1000 strokes : 303.0 -                               | Tolerance mm : +- 0.25                                                |
| Tolerance cm3/1000 strokes : +- 1.0                                      | Rated speed rpm : 1310 guide sleeve travel mm : 13.50                 |
| Check tolerance cm3/1000s. : ← 4.0                                       | *Olerance mm : +- 0.50                                                |
| Spreed                                                                   | + GUIDE SLEEVE POSITION<br>+                                          |
| Tolerance - 5.0                                                          | control lever position degree : - 1 Rated speed rpm : 1171            |
| Check tolerance                                                          | Rack travel in mm : 10.70 Tolerance mm : +- 2.60                      |
| Rated speed rpm : 275                                                    | FULL LOAD DELIVERY AT FULL LOAD STOP                                  |
| Rack travel in mm : 3.90  Tolerance mm : + 0.10  Del. quantity           | Rated speed rpm : 750 Aneroid pressure hPa : 1500                     |
| cm3/1000 strokes : 17.0<br>Tolerance                                     | Del. quantity<br>cm3/1000 strokes : 303.0                             |
| <pre>cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0</pre> | + Tolerance<br>+ cm3/1000 strokes : +- 1.0<br>+ Check tolerance       |
| Spreed - Tolerance - cm3/1000 strokes : 8.0 -                            | - cm3/1000s. : +- 4.0<br>- Spreed<br>- Tolerance                      |
| Check tolerance cm3/1000s. : 12.0                                        | cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0               |
| (B) SETTING OF INJECTION PUMP                                            |                                                                       |
| WITH GOVERNOR -                                                          | CONTROL LEVER                                                         |
| GUIDE SLEEVE TRAVEL                                                      | control lever position degree : 118.0                                 |
| Rated speed rpm : 1062 - guide sleeve -                                  | tolerance degree : +- 4.0                                             |
| travel mm : 10.04 Tolerance mm : + 0.15                                  | + RATED SPEED<br>+ rack travel mm : 11.35<br>+ Rated speed rpm : 1050 |
| Rated speed rpm : 275 guide sleeve                                       | + Tolerance 1/min : +- 5<br>+ Check                                   |
| travel mm : 2.04 Tolerance mm : + 0.20                                   | speed 1/min : +- 10<br>rack travel mm : 4.00                          |
| Rated speed rpm : 697 guide sleeve                                       | Rated speed rpm : 1150 Tolerance 1/min : +- 15                        |
| travel mm : 6.48 Tolerance mm : + 0.25                                   | Check speed 1/min : +- 20                                             |
| Rated speed rpm : 400                                                    | rack travel mm : 0.50                                                 |

| Tolerance mm<br>Rated speed rpm                                     | : +- 0.50<br>: 1275            |
|---------------------------------------------------------------------|--------------------------------|
| LOW IDLE                                                            |                                |
| control lever<br>position degree<br>tolerance degree                |                                |
| Setting point w/c                                                   | out bumper spring              |
| Rated speed rpm                                                     | : 175                          |
| CRT mm min.                                                         | : > 6.50                       |
| Testing:                                                            |                                |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 275<br>: 3.90<br>: ← 0.10    |
| Rated speed rpm                                                     | : 300                          |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 750<br>: 12.60<br>: + 0.05   |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 980<br>: 12.35<br>: +- 0.10  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 900<br>: 12.50<br>: +- 0.10  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 700<br>: 12.30<br>: +- 0.10  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   |                                |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 500<br>: 11.45<br>: +- 0.10  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 1000<br>: 12.35<br>: +- 0.10 |
|                                                                     |                                |

| ANEROID/ALTITUDE<br>COMPENSATOR TEST                                                                                                                                                                                                                                                              |                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| SETTING                                                                                                                                                                                                                                                                                           |                                                                       |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                                                                                                                                                                                 | : 775<br>: 1500<br>: 12.65<br>: +- 0.05                               |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                                                                                                                                                                                 | : 775<br>: -<br>: 8.50<br>: +- 0.20                                   |
| MEASUREMENT                                                                                                                                                                                                                                                                                       |                                                                       |
| Rated speed rpm                                                                                                                                                                                                                                                                                   | : 775                                                                 |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                                                                                                                                                                                                    | : 450<br>: 12.10<br>: +- 0.05                                         |
| Pressure hPa<br>rack travel man<br>Tolerance mm                                                                                                                                                                                                                                                   | : 170<br>: 9.90<br>: +- 0.10                                          |
|                                                                                                                                                                                                                                                                                                   |                                                                       |
| FUEL DELIVERY CHA                                                                                                                                                                                                                                                                                 |                                                                       |
|                                                                                                                                                                                                                                                                                                   |                                                                       |
| FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed                                                                                                                                               | : 1500<br>: 980<br>: 272.0                                            |
| FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes                                                                                                                    | : 1500<br>: 980<br>: 272.0<br>: +- 2.0                                |
| FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance                                                                                                                                     | : 1500<br>: 980<br>: 272.0<br>: +- 2.0<br>: +- 5.0                    |
| FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.                                                             | : 1500<br>: 980<br>: 272.0<br>: +- 2.0<br>: +- 5.0<br>: 8.0           |
| FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa | : 1500<br>: 980<br>: 272.0<br>: +- 2.0<br>: +- 5.0<br>: 8.0<br>: 12.0 |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity                                                              | : 1500<br>: 980<br>: 272.0<br>: +- 2.0<br>: +- 5.0<br>: 8.0<br>: 12.0 |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm                                                                            | : 1500<br>: 980<br>: 272.0<br>: +- 2.0<br>: +- 5.0<br>: 8.0<br>: 12.0 |

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 17.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24,06,97 : ISO 4113

Combination No. : 0 402 646 673

Injection pump

Pump designation : PE6P12OA32ORS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1300K

Governer no. : 0 421 815 527

Cust. part No. : 1315099

Customer-spec. information

Customer : DAF

Motor Power KW : 250.0

: XF 250 M

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : +- 0.1

Overflow quantity min. l/h : 150
Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

J25

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 : +- 0.50 Tolerance

Check

tolerance 'NW : +- 0.75

Start of delivery mark

Tolerance : + 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.00

Tolerance mm : +- 0.05

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | l guido al agua                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Dol guantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | + guide sleeve<br>- travel mm : 3.92 |
| Del. quantity - cm3/1000 strokes : 289.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |
| cm3/1000 strokes : 289.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Tolerance mm : +- 0.25               |
| * 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | †                                    |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rated speed rpm : 1310               |
| cm3/1000 strokes : +- 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | guide sleeve                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | † travel mm : 13.50                  |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | † Tolerance mm : +- 0.50             |
| cm3/100US. : +- 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <del>}</del>                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | GUIDE SLEEVE POSITION                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                                    |
| cm3/1000 strokes : 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | control lever                        |
| 11137 1000 Strokes . J.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rated speed rpm : 1181               |
| cm3/1000S. : 9.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | †                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rack travel in mm : 10.00            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | † Tolerance mm : +- 1.30             |
| •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | +                                    |
| Rated speed rpm : 275                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | FULL LOAD DELIVERY AT FULL LOAD STOP |
| Rack travel in mm: 3.90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | +                                    |
| Toterance mm : +- 0.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Rated speed rpm : 750                |
| Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Aneroid pressure                     |
| cm3/1000 strokes : 17.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | + hPa : 1500                         |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Del. quantity                        |
| cm3/1000 strokes : +- 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Tolerance                            |
| cm3/1000s. : +- 6.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | cm3/1000 strokes : +- 1.0            |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | + Check tolerance                    |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | + cm3/1000s. : +- 4.0                |
| cm3/1000 strokes : 8.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | + Spreed                             |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + Tolerance                          |
| cm3/1000s. : 12.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | cm3/1000 strokes : 5.0               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - Check tolerance                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - cm3/1000s. : 9.0                   |
| (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1 (1137 10000)                       |
| WITH GOVERNOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                      |
| WITH GOVERNOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                      |
| •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CONTROL LEVES                        |
| Out of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state o | CONTROL LEVER                        |
| GUIDE SLEEVE TRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | †                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | t control lever                      |
| Rated speed rpm : 1072                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | position degree : 118.0              |
| guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | tolerance degree : +- 4.0            |
| travel mm : 10.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | +                                    |
| Tolerance mm : + 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | RATED SPEED                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | rack travel mm : 10.50               |
| Rated speed rpm : 275                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Rated speed rpm : 1045               |
| guide steeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Tolerance 1/min : +- 5               |
| travel mm : 2.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Check                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |
| Tolerance mm : + 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + speed 1/min : +- 10                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | †                                    |
| Rated speed rpm : 701                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | track travel mm : 4.00               |
| guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Rated speed rpm : 1140               |
| travel mm : 6.52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Tolerance 1/min : +- 15              |
| Tolerance mm : + 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Check                                |
| · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | speed 1/min : +- 20                  |
| Rated speed rpm : 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                      |
| TOO TOO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | rack travel mm : 0.70                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1 CON CLUYCE HAIR . U.FU             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |

| Tolerance mm                                               | : +- 0.70                    |
|------------------------------------------------------------|------------------------------|
| Rated speed rpm                                            | : 1275                       |
| LOW IDLE                                                   |                              |
| control lever<br>position degree<br>tolerance degree       | : 70.0<br>: + 4.0            |
| Setting point w/o                                          | ut bumper spring             |
| Rated speed rpm                                            | : 175                        |
| CRT mm min.                                                | : > 6.50                     |
| Testing:                                                   |                              |
| Rated speed rpm                                            | : 275                        |
| rack travel mm                                             | : 3.90                       |
| Tolerance mm                                               | : + 0.10                     |
| Rated speed rpm                                            | : 310                        |
| TCRQUE CONTROL Rated speed rpm rack travel mm Tolerance mm | : 750<br>: 12.00<br>: + 0.05 |
| Rated speed rpm                                            | : 980                        |
| rack travel mm                                             | : 11.50                      |
| Tolerance mm                                               | : + 0.10                     |
| Rated speed rpm                                            | : 900                        |
| rack travel mm                                             | : 11.70                      |
| Tolerance mm                                               | : + 0.10                     |
| Rated speed rpm                                            | : 700                        |
| rack travel mm                                             | : 12.00                      |
| Tolerance mm                                               | : +- 0.10                    |
| Rated speed rpm                                            | : 600                        |
| rack travel mm                                             | : 11.40                      |
| Tolerance mm                                               | : + 0.10                     |
| Rated speed rpm                                            | : 500                        |
| rack travel mm                                             | : 10.90                      |
| Tolerance mm                                               | : + 0.10                     |
| Rated speed rpm                                            | : 1000                       |
| rack travel mm                                             | : 11.50                      |
| Tolerance mm                                               | : + 0.10                     |

| ANEROID/ALTITUDE<br>COMPENSATOR TEST                              |                                         |
|-------------------------------------------------------------------|-----------------------------------------|
| SETTING                                                           |                                         |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm | : 775<br>: 1500<br>: 12.00<br>: +- 0.05 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm | : 775<br>: -<br>: 8.30<br>: +- 0.20     |
| MEASUREMENT                                                       |                                         |
| Rated speed rpm                                                   | : 775                                   |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                    | : 460<br>: 11.00<br>: +- 0.05           |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                    | : 250<br>: 9.30<br>: +- 0.10            |
| FUEL DELIVERY CHA                                                 | RACTERISTICS                            |
| Aneroid pressure<br>hPa<br>Rated speed rpm<br>Del. quantity       | : 1500<br>: 980                         |
| cm3/1000 strokes                                                  | : 250.0                                 |

| FUEL DELIVERY CHA                                                                                                        | RACTERISTICS                                  |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Aneroid pressure<br>hPa<br>Rated speed rpm<br>Del. quantity<br>cm3/1000 strokes<br>Tolerance<br>cm3/1000 strokes         | : 1500<br>: 980<br>: 250.0<br>: +- 2.0        |
| Check tolerance cm3/1000S. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000S.                                  | : +- 5.0<br>: 8.0<br>: 12.0                   |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000. | : -<br>: 600<br>: 188.0<br>: + 1.0<br>: + 4.0 |

# LOW IDLE

| Rated speed rpm                                    | :    | 275          |
|----------------------------------------------------|------|--------------|
| Rack travel in mm<br>Tolerance mm<br>Del. quantity | : +- | 3.90<br>0.10 |
| cm3/1000 strokes                                   | :    | 17.0         |
| Tolerance cm3/1000 strokes                         | : +- | 3.0          |
| Check tolerance cm3/1000s.                         | : +- | 6.0          |
| Spreed<br>Tolerance                                |      |              |
| cm3/1000 strokes                                   | :    | 8.0          |
| Check tolerance cm3/1000s.                         | :    | 12.0         |

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 16.06.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 742

Injection pump

Pump designation : PE6P120A320LS7837-2

EP type number : 0 412 626 943

Governor

Governer design. : RQ300/1100PA1272 Governer no. : 0 421 801 804

Cust. part No. : 0270743002

Customer-spec. information Customer : MB-NFZ : 0M441 LA Motor : 228.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 120 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 har Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter:

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

5.25 Prestroke mm : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 6-3-5-2-4-

: 1

: 0-60-120-180-240 Phasing

: -300

: **←** 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 6

CRT ZERO POSITION

Rack travel in mm: 12.50

| Tolerance mm : +- 0.10                                     | + guide sleeve<br>+ travel mm : 2.24                                       |
|------------------------------------------------------------|----------------------------------------------------------------------------|
| BASIC SETTING                                              | Tolerance mm : +- 0.20                                                     |
| Rated speed rpm : 600                                      | Rated speed rpm : 1100 guide sleeve                                        |
| Rack travel in mm : 12.50                                  | travel mm : 6.00 Tolerance mm : +- 0.10                                    |
| Tolerance mm : + 0.10                                      | Rated speed rpm : 429 guide sleeve                                         |
| Del. quantity<br>cm3/1000 strokes : 191.0                  | travel mm : 4.97 Tolerance mm : +- 0.10                                    |
| Tolerance cm3/1000 strokes : + 1.0                         | Rated speed rpm : 550 guide sleeve travel mm : 6.00                        |
| Check tolerance cm3/1000s. : + 4.0                         | Tolerance mm : +- 0.10                                                     |
| Spreed                                                     | Rated speed rpm : 1340 guide sleeve                                        |
| Tolerance cm3/1000 strokes : 6.0                           | travel mm : 11.50 Tolerance mm : +- 0.50                                   |
| Check tolerance cm3/1000s. : 9.0                           | GUIDE SLEEVE POSITION                                                      |
| Rated speed rpm : 300                                      | control lever position degree : 109 Rated speed rpm : 650                  |
| Rack travel in mm : 5.60 Tolerance mm : + 0.10             | Rack travel in mm : 20.00 Tolerance mm : +- 0.80                           |
| Del. quantity<br>cm3/1000 strokes : 16.0<br>Tolerance      | +                                                                          |
| cm3/1000 strokes : + 3.0 Check tolerance                   | Rated speed rpm : 600                                                      |
| cm3/1000s. : +- 6.0<br>Spreed<br>Tolerance                 | + Aneroid pressure<br>+ hPa : 600<br>+ Del. quantity                       |
| cm3/1000 strokes : 6.0 Check tolerance                     | cm3/1000 strokes : 191.0<br>Tolerance                                      |
| cm3/1000s. : 10.0                                          | + cm3/1000 strokes : +- 1.0<br>+ Check tolerance<br>+ cm3/1000\$. : +- 4.0 |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR                | + Spreed<br>+ Tolerance                                                    |
|                                                            |                                                                            |
| GUIDE SLEEVE TRAVEL                                        | + cm3/1000s. : 9.0                                                         |
| Rated speed rpm : 1146<br>guide sleeve<br>travel mm : 6.54 | CONTROL LEVER                                                              |
| Tolerance mm : + 0.15                                      | control lever                                                              |
| Rated speed rpm : 300                                      | position degree : 94.0<br>tolerance degree : +- 4.0                        |

|                                                                              |                                | +                                                                   |                         |
|------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------|-------------------------|
| RATED SPEED<br>rack travel mm<br>Rated speed rpm<br>Tolerance 1/min<br>Check |                                | ANEROID/ALTITUDE<br>COMPENSATOR TEST                                |                         |
| speed 1/min                                                                  | : <del>+-</del> 13             | 2-stage LDA setting                                                 | 1                       |
| rack travel mm<br>Rated speed rpm<br>Tolerance 1/min<br>Check                |                                | Rated speed rpm : Pressure hPa :                                    | 400                     |
| speed 1/min                                                                  | : +- 20                        | MEASUREMENT                                                         |                         |
| rack travel mm<br>Tolerance mm<br>Rated speed rpm                            | : 0.75<br>: +- 0.75<br>: 1350  | + rack travel mm :                                                  | 350<br>-1.20<br>+- 0.15 |
|                                                                              |                                | Pressure hPa : rack travel mm : Tolerance mm :                      | 200<br>-2.20<br>+- 0.20 |
| LOW IDLE                                                                     |                                | + Pressure hPa :<br>+ rack travel mm :                              | 975<br>0.50             |
| control lever<br>position degree<br>tolerance degree                         |                                |                                                                     | + 0.05<br>              |
| Setting point w/c                                                            |                                | + Start interlock                                                   |                         |
| Rated speed rpm                                                              | : 200                          |                                                                     | > 100<br>< 220          |
| CRT mm min.                                                                  | ; > 9.00                       | + Check<br>+ speed 1/min :                                          | > 80                    |
| Testing:                                                                     |                                | Check                                                               | < 240                   |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                            | : 300<br>: 5.60<br>: +- 0.10   | FUEL DELIVERY CHARA                                                 |                         |
| rack travel mm<br>Rated speed rpm<br>Tolerance 1/min                         | : 2.00<br>: 400<br>: + 20      | Aneroid pressure hPa : Rated speed rpm :                            | 1500<br>1100            |
| TORQUE CONTROL Rated speed rpm                                               |                                | Del. quantity cm3/1000 strokes : Tolerance                          |                         |
| rack travel mm<br>Tolerance mm                                               | : 12.50<br>: +- 0.10           | cm3/1000 strokes : Check tolerance                                  |                         |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                            | : 1100<br>: 13.70<br>: +- 0.10 | <pre>+ cm3/1000s. : - Spreed - Tolerance - cm3/1000 strokes :</pre> | +- 4.5<br>8.0           |
| Rated speed rpm                                                              | : 700                          | Check tolerance cm3/1000s.                                          |                         |
| rack travel mm Tolerance mm                                                  |                                | Aneroid pressure                                                    |                         |
|                                                                              |                                | hPa : Rated speed rpm :                                             | 1500<br>700             |

Del. quantity 216.0 cm3/1000 strokes : Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 6.0 Aneroid pressure hPa 500 Rated speed rom Del. quantity cm3/1000 strokes : 145.0 Tolerance cm3/1000 strokes 1.0 Check tolerance cm3/1000S.4.0 STARTING FUEL DELIVERY 100 Rated speed rpm : Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : +- 15.0Check tolerance cm3/1000s. : +- 19.0 LOW IDLE Rated speed rpm : 300 Rack travel in mm : 5.60 Tolerance mm 0.10 Del. quantity cm3/1000 strokes : 16.0 Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000S.6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance 10.0 cm3/1000S.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.06.97 Test oil : ISO 4113

Combination No. : 0 402 646 763

Injection pump

Pump designation : PE6P120A320LS7834

: -10

EP type number : 0 412 626 853

Governor

Governer design. : RQV300...1050PA1065

: -2

Governer no. : 0 421 814 135

Cust. part No. : 0260743702

Customer—spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm: 14.80 Tolerance mm: + 0.05

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| Del. quantity cm3/1000 strokes  | : 230.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | + Tolerance mm : +- 0.25                           |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Tolerance                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rated speed rpm : 750 guide sleeve                 |
| cm3/1000 strokes                | : +- 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | † travel mm : 4.87                                 |
| Check tolerance                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Tolerance mm : +- 0.25                             |
| cm3/1000s.                      | : +- 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Rated speed rpm : 1310 guide sleeve                |
| Spreed                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + travel mm : 13.50                                |
| <b>T</b> .)                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Tolerance mm : + 0.50                              |
| Tolerance<br>cm3/1000 strokes   | : 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | GUIDE SLEEVE POSITION                              |
| Check tolerance                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | T GOIDE SEEEVE 1031110N                            |
| cm3/1000s.                      | : 9.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | +                                                  |
|                                 | the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s | + control lever                                    |
|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | position degree : - 1                              |
| Damad assaul assaul             | . 700                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + Rated speed rpm : 1200                           |
| Rated speed rpm                 | : 300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Rack travel in mm: 13.80                           |
| Rack travel in mm               | n · 5 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Tolerance mm : + 1.30                              |
| Tolerance mm                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Total disconnii                                    |
| Del. quantity                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    |
| cm3/1000 strokes                | : 13.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FULL LOAD DELIVERY AT FULL LOAD STOP               |
| Tolerance                       | . 7.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | +                                                  |
| cm3/1000 strokes                | : +- 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Rated speed rpm : 550                              |
| Check tolerance cm3/1000s.      | : +- 6.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | + Aneroid pressure<br>+ hPa : 1000                 |
| Spreed                          | : 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | T lica . 1000<br>→ Del. quardity                   |
| Tolerance                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cm3/1000 strokes : 230.0                           |
| cm3/1000 strokes                | : 6.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + Tolerance                                        |
| Check tolerance                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + cm3/1000 strokes : + 1.0                         |
| cm3/1000s.                      | : 10.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | † Check tolerance                                  |
|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +  cm3/1000s. : +- 4.0                             |
| (a) Assertio As Ti              | LICOTTON DUMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Spreed                                             |
| (B) SETTING OF IN               | NIECTION PUMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | + Tolerance<br>+ cm3/1000 strokes : 5.0            |
| WITH GOVERNOR                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + Check tolerance                                  |
|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + cm3/1000s. : 9.0                                 |
| GUIDE SLEEVE TRAV               | /EL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | +                                                  |
|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  |
| Rated speed rpm                 | : 1108                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CONTROL LEVED                                      |
| guide sleeve<br>travel mm       | : 9.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | + CONTROL LEVER                                    |
| Tolerance mm                    | : +- 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                    |
| TOCCT GITCE THAT                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | position degree : 104.0                            |
| Rated speed rpm                 | : 300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | tolerance degree : +- 4.0                          |
| guide sleeve<br>travel mm       | : 1.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RATED SPEED                                        |
| Tolerance mm                    | : +- 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | + rack travel mm : 13.80                           |
| 10001 47700 11111               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rated speed rpm : 1095                             |
| Rated speed rpm<br>guide sleeve | : 370                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Tolerance 1/min : +- 5                             |
| travel mm                       | : 2.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | rack travel mm : 4.00                              |
| Tolerance mm                    | : <del></del> 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Rated speed rpm : 1195                             |
| _                               | /20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Tolerance 1/min : + 15                             |
| Rated speed rpm                 | : 420                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + rack travel mm : 0.75                            |
| guide sleeve<br>travel mm       | : 2.49                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | + rack travel mm : 0.75<br>+ Tolerance mm : + 0.75 |
| travet mm                       | : 2.49                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | T TOTAL MAIN . F- 0.13                             |

| Rated speed rpm   | : 1300               | <b>_</b>                           |                   |
|-------------------|----------------------|------------------------------------|-------------------|
| rated speed thii  | . 1300               | Pressure hPa                       | : 400             |
|                   |                      |                                    |                   |
|                   |                      | + rack travel mm<br>+ Tolerance mm | : +- 0.20         |
|                   |                      | 1                                  |                   |
| LOW IDLE          |                      | + Pressure hPa                     | : 600             |
|                   |                      | + rack travel mm                   |                   |
|                   |                      | + Tolerance mm                     |                   |
| control lever     |                      | +                                  |                   |
| position degree   | : 68.0               | +                                  |                   |
| tolerance degree  | : +- 4.0             | Start interlock                    |                   |
| •                 |                      | +                                  |                   |
| Setting point w/d | out bumper spring    | + Rated speed rpm                  | : > 100           |
|                   |                      | + Rated speed rpm                  | : < 220           |
| Rated speed rpm   | : 200                | +                                  |                   |
|                   |                      | + Check                            |                   |
| CRT mm min.       | : > 8.10             | + speed 1/min                      | : > 80            |
|                   |                      | + Check                            |                   |
| Testing:          |                      | + speed 1/min                      | : < 240           |
|                   |                      | +                                  |                   |
| Rated speed rpm   | : 300                | +                                  |                   |
| rack travel mm    |                      | + FUEL DELIVERY CH                 | ARACTERISTICS     |
| Tolerance mm      | : + 0.10             | +                                  |                   |
|                   |                      | +                                  |                   |
| Rated speed rpm   | : 350                | + Aneroid pressure                 |                   |
|                   |                      | + hPa                              | : 1000            |
|                   |                      | Rated speed rpm                    | : 1050            |
| TORQUE CONTROL    |                      | <pre>Del. quantity</pre>           |                   |
| Rated speed rpm   | : 550                | + cm3/1000 strokes                 | : 227.0           |
| rack travel mm    | : 14.80              | † Tolerance                        |                   |
| Tolerance mm      | : +- 0.05            | + cm3/1000 strokes                 | : <del></del> 3.0 |
|                   |                      | + Check tolerance                  |                   |
| Rated speed rpm   | : 1050               | + cm3/1000s.                       | : +- 6.0          |
| rack travel mm    | : 14.80              | + Spreed                           |                   |
| Tolerance mm      | : <del>+-</del> 0.10 | + Tolerance                        |                   |
|                   |                      | + cm3/1000 strokes                 |                   |
| Rated speed rpm   | : 700<br>: 14.80     | + Check tolerance                  |                   |
| rack travel mm    | : 14.80              | → cm3/1000s.                       | : 12.0            |
| Tolerance mm      | : +- 0.05            | +                                  |                   |
|                   |                      | +                                  |                   |
|                   |                      | + Aneroid pressure                 |                   |
| ANEROID/ALTITUDE  |                      | ∔ hPa                              | : -               |
| COMPENSATOR TEST  |                      | + Rated speed rpm                  | : 500             |
|                   |                      | + Del. quantity                    |                   |
|                   |                      | + cm3/1000 strokes                 | : 129.0           |
| SETTING           |                      | + Tolerance                        |                   |
|                   |                      | + cm3/1000 strokes                 | : +- 1.0          |
| Rated speed rpm   | : 400                | + Check tolerance                  |                   |
| Pressure hPa      | : 1000               | + cm3/1000s.                       | : +- 4.0          |
| rack travel mm    | : 14.80              | + Spreed                           |                   |
| Tolerance mm      | : +- 0.05            | + Tolerance                        |                   |
|                   |                      | + cm3/1000 strokes                 | : 8.0             |
| Rated speed rpm   | : 400                | † Check tolerance                  |                   |
| Pressure hPa      | : -                  | + cm3/1000s.                       | : 12.0            |
| rack travel mm    | : 10.50              | +                                  |                   |
| Tolerance mm      | : <b>←</b> 0.15      | +                                  |                   |
|                   |                      | +                                  |                   |
| MEASUREMENT       |                      | STARTING FUEL DEL                  | IVERY             |
| Rated speed rpm   | : 400                | Rated speed rpm                    | : 100             |

K07

Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : +- 15.0Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

300 Rated speed rpm : 5.20 Rack travel in mm : : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0 Spreed Tolerance

cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30,09,94 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 904

Injection pump

Pump designation : PE6P12OA72ORS7126

: -10

EP type number : 0 412 626 929

Governor

Governer design. : RQV300...900PA795

: -10

: 0 421 813 846 Governer no.

Cust. part No. : 1305081

Customer-spec. information Customer : SCANIA : DS11 Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 14.75 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 235.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: +- 4.0 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s.

9.0

| Rated speed rpm : 300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | tolerance degree : + 4.0            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Rack travel in mm : 4.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | RATED SPEED                         |
| Tolerance mm : + 0.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + rack travel mm : 13.10            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |
| Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |
| cm3/1000 strokes : 17.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | + Tolerance 1/min : + 5             |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | + Check                             |
| $cm3/1000$ strokes : $\leftarrow$ 2.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + speed 1/min : +- 10               |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                   |
| $cm3/1000s.$ : $\leftarrow$ 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + rack travel mm : 4.00             |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | + Rated speed rpm : 1045            |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | + Tolerance 1/min : +- 15           |
| cm3/1000 strokes : 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | + Check                             |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + speed 1/min : + 20                |
| cm3/1000s. : 6.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1                                   |
| (1157 10000 :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | rack travel mm : 0.50               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + Tolerance mm : +- 0.50            |
| (D) CETTING OF INTECTION DUMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | · ·                                 |
| (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rated speed rpm : 1150              |
| ₩ITH GOVERNOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | †                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | †                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | †                                   |
| CHINE SIEENE DOSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + LOW IDLE                          |
| GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | T LOW TOLE                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>T</b>                            |
| and allers and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | T control loven                     |
| control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | t control lever                     |
| position degree : -1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | + position degree : 77.0            |
| Rated speed rpm : 970                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | tolerance degree : +- 4.0           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <del>†</del>                        |
| Rack travel in mm : 16.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | + control lever                     |
| Tolerance mm : + 1.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + position degree : 19.0            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + tolerance degree : +- 4.0         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                   |
| FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | + Setting point w/out bumper spring |
| 700                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 100                                 |
| Rated speed rpm : 700                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | + Rated speed rpm : 100             |
| Aneroid pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | †                                   |
| hPa : -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | + CRT mm min. : > 10.00             |
| Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | +                                   |
| cm3/1000 strokes : 235.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | + Testing:                          |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | +                                   |
| cm3/1000 strokes : + 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Rated speed rpm : 300               |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | rack travel mm : 4.50               |
| cm3/1000s. : +- 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | + Tolerance mm : +- 0.10            |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1                                   |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rated speed rpm : 300               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | rack travel mm : 2.00               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | T TACK CLAVEL HHII . C.UU           |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |
| cm3/1000s. : 9.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TOROUT CONTROL                      |
| •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TORQUE CONTROL                      |
| •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Rated speed rpm : 700               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | rack travel mm : 14.15              |
| CONTROL LEVER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Tolerance mm : +- 0.05              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Patadaman 200                       |
| control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rated speed rpm : 900               |
| position degree : 50.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | rack travel mm : 14.15              |
| tolerance degree : +- 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Tolerance mm : + 0.05               |
| •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | +                                   |
| control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | +                                   |
| position degree : 108.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | +                                   |
| The service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the service of the se | •                                   |

# ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

500 Rated speed rpm Pressure hPa 900 14.15 rack travel mm : +- 0.05 Tolerance mm

500 Rated speed rpm Pressure hPa 10,70 rack travel mm Tolerance mm : +- 0.20

### **MEASUREMENT**

Rated speed rpm 500

510 Pressure hPa 13.05 rack travel mm Tolerance mm : +- 0.05

Pressure hPa 250 rack travel mm 11.20 Tolerance mm : +- 0.20

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 900 Rated speed rpm

Del. quantity

cm3/1000 strokes : 224.0 Tolerance

4.0

cm3/1000 strokes : +-

Check tolerance cm3/1000s. 6.0

Aneroid pressure

hPa 500 Rated speed rpm Del. quantity

cm3/1000 strokes : 152.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

4.0 cm3/1000s.

STARTING FUEL DELIVERY

Rated speed rpm : 100 20.50 rack travel mm : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance

### LOW IDLE

cm3/1000s.

cm3/1000s.

300 Rated speed rpm : Rack travel in mm : 4.50 Tolerance mm **6.10** Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance

6.0

: +- 24.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 20.06.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 648 783

Injection pump

Pump designation : PE8P120A320LS7906-1 EP type number : 0 412 628 925

Governor

Governer design. : RQ750PA1326 Governer no. : 0 421 801 815

Cust. part No. : 04222 3938 KY

Customer-spec. information

Customer : KHD

: BF8M1015/C Motor : 318.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 200 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMF SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 8-7-2-6-5 :-4-3-1

: 0-45-90-135-180 Phasing : -225-270-315

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 315.00 : +- 0.50 Tolerance

Check

: +- 0.75 tolerance °NW

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 700

|                                       | +                                                  | guide sleeve                          |
|---------------------------------------|----------------------------------------------------|---------------------------------------|
| Rack travel in mo                     | n: 12.60 +                                         | travel mm : 12.00                     |
| Tolerance mm                          | : +- 0.05                                          | Tolerance mm : +- 0.25                |
|                                       | +                                                  |                                       |
| Del. quantity                         | 4                                                  | Rated speed rpm : 930                 |
| cm3/1000 strokes                      | : 365.0 <del> </del>                               | guide sleeve                          |
|                                       | <del> </del>                                       | travel mm : 13.50                     |
| Tolerance                             |                                                    | Tolerance mm : +- 0.50                |
| cm3/1000 strokes                      | : +- 1.0 <del>}</del>                              |                                       |
|                                       | <del>+</del>                                       |                                       |
| Check tolerance                       |                                                    | FULL LOAD DELIVERY AT FULL LOAD STOP  |
| cm3/1000S.                            | : +- 4.0                                           |                                       |
|                                       | +                                                  | Rated speed rpm : 700                 |
| Spreed                                |                                                    | Aneroid pressure                      |
| •                                     | +                                                  | hPa : -                               |
| Tolerance                             | +                                                  | Del. quantity                         |
| cm3/1000 strokes                      | : 5.0                                              | cm3/1000 strokes : 365.0              |
|                                       | 1                                                  | Tolerance                             |
| Check tolerance                       |                                                    | cm3/1000 strokes : $+-$ 1.0           |
| cm3/1000s.                            | : 9.0                                              | Check tolerance                       |
|                                       |                                                    | cm3/1000s. : + 4.0                    |
|                                       | +                                                  | Spreed                                |
|                                       | <del> </del>                                       | Tolerance                             |
| Rated speed rpm                       | : 300                                              | cm3/1000 strokes : 5.0                |
| Del. quantity                         | +                                                  | Check tolerance                       |
| cm3/1000 strokes                      | : 20.0                                             | cm3/1000s. : 9.0                      |
| Tolerance                             | <del>1</del>                                       |                                       |
| cm3/1000 strokes                      | : +- 3.0 \rightarrow                               |                                       |
| Check tolerance                       | 1                                                  |                                       |
| cm3/1000s.                            | : ← 6.0 <del> </del>                               | CONTROL LEVER                         |
| Spreed                                | · • • • • • • • • • • • • • • • • • • •            |                                       |
| Tolerance                             | 1                                                  | control lever                         |
| cm3/1000 strokes                      | : 8.0                                              | position degree : 110.0               |
| Check tolerance                       | 1                                                  | tolerance degree : +- 4.0             |
| cm3/1000s.                            | : 12.0                                             |                                       |
|                                       | 1                                                  |                                       |
|                                       | 1                                                  | ASSEMBLY GOVERNOR SETTING             |
| (B) SETTING OF IN                     | MECTION PUMP                                       |                                       |
| WITH GOVERNOR                         | 1                                                  | Rated speed rpm : 750                 |
| W2111 00 V2101011                     | 1                                                  | rack travel mm : 11.60                |
|                                       |                                                    |                                       |
| GUIDE SLEEVE TRAV                     | rel 1                                              | Rated speed rpm : 780                 |
| TATAL APPRIES 11/1/1                  | <u></u>                                            | Tolerance 1/min : +- 4                |
| Rated speed rpm                       | : 715                                              | rack travel mm : 4.50                 |
| guide sleeve                          | <sup>1</sup> · · · · · · · · · · · · · · · · · · · |                                       |
| travel mm                             | : 4.23                                             | rack travel mm : 0.50                 |
| Tolerance mm                          | : + 0.15                                           | Tolerance mm : +- 0.50                |
| 5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 | 1                                                  | Rated speed rpm : 900                 |
| Rated speed rpm                       | : 610                                              | ,                                     |
| guide sleeve                          | <u> </u>                                           |                                       |
| travel mm                             | : 0.72                                             | Rated speed rpm : 751                 |
| Tolerance mm                          | : +- 0.25                                          | rack travel mm : 11.60                |
|                                       | <u> </u>                                           |                                       |
| Rated speed rpm                       | : 900                                              | Rated speed rpm : 781                 |
| guide sleeve                          | 1                                                  | Tolerance 1/min : + 4                 |
| travel mm                             | : 14.89                                            | rack travel mm : 4.50                 |
| Tolerance mm                          | + 0.25                                             | · · · · · · · · · · · · · · · · · · · |
| I WENT WITH THE                       | 1                                                  | rack travel mm : 0.50                 |
| Rated speed rpm                       | : 862                                              | Tolerance mm : + 0.50                 |
| nacea opeca i piii                    | 1                                                  |                                       |
|                                       | '                                                  |                                       |

| Rated speed rpm<br>rack travel mm                                   | : 752<br>: 11.60             |
|---------------------------------------------------------------------|------------------------------|
| Rated speed rpm<br>Tolerance 1/min<br>rack travel mm                | : +- 4                       |
| rack travel mm<br>Tolerance mm<br>Rated speed rpm                   | : <del></del> 0.50           |
| Rated speed rpm<br>rack travel mm                                   |                              |
| Rated speed rpm<br>Tolerance 1/min<br>rack travel mm                | : 783<br>: ← 4<br>: 4.50     |
| rack travel mm<br>Tolerance mm                                      | : 0.50<br>: + 0.50           |
| Rated speed rpm<br>rack travel mm                                   | : 754<br>: 11.60             |
| Rated speed rpm<br>Tolerance 1/min<br>rack travel mm                | : +- 4                       |
| rack travel mm<br>Tolerance mm<br>Rated speed rpm                   |                              |
| Rated speed rpm<br>rack travel mm                                   | : 755<br>: 11.60             |
| Rated speed rpm<br>Tolerance 1/min<br>rack travel mm                | : 785<br>: + 4<br>: 4.50     |
| rack travel mm<br>Tolerance mm                                      | : 0.50<br>: + 0.50           |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 700<br>: 12.60<br>: + 0.05 |
| Start interlock                                                     |                              |
| Rated speed rpm<br>Rated speed rpm                                  |                              |

| Check<br>speed 1/min<br>Check  | ; >      | >  | 80           |                                        |
|--------------------------------|----------|----|--------------|----------------------------------------|
| speed 1/min                    | : <      | <  | 580          |                                        |
|                                |          |    |              |                                        |
| STARTING FUEL DEL              | IVER     | RY | <del></del>  | ······································ |
| Rated speed rpm                | :        |    | 100          |                                        |
| rack travel mm<br>Tolerance mm | :<br>; + |    | 20.25        |                                        |
| Del. quantity cm3/1000 strokes | :        |    | 200.0        |                                        |
| Tolerance cm3/1000 strokes     | ; +      |    | 15.0         |                                        |
| Check tolerance cm3/1000s.     | : +      |    | 19.0         |                                        |
|                                |          |    |              |                                        |
| LOW IDLE                       |          | -  | <del> </del> | ·····                                  |
| Rated speed rpm                | :        |    | 300          |                                        |
| Del. quantity cm3/1000 strokes | :        |    | 20.0         |                                        |
| Tolerance cm3/1000 strokes     | : +      |    | 3.0          |                                        |
| Check tolerance cm3/1000s.     | : +      | _  | 6.0          |                                        |
| Spreed<br>Tolerance            |          |    |              |                                        |
| cm3/1000 strokes               | :        |    | 8.0          |                                        |
| Check tolerance                |          |    | 12.0         |                                        |
| cm3/1000s.                     | :        |    | 12.0         |                                        |
|                                | :        |    | 12.0         |                                        |
|                                | :        |    | 12.0         |                                        |

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.97 Test oil : ISO 4113

Combination No. : 0 402 648 794

Injection pump

Pump designation : PE8P120A320LS7890 EP type number : 0 412 628 913

Governor

Governer design. : RQV350...900PA1266

Governer no. : 0 421 814 171

Cust. part No. : 0260740502

Customer—spec. information
Customer : MB-NFZ
Motor : 0M442 LA
Power KW : 327.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 10.20 Tolerance mm : +- 0.10

BASIC SETTING

Rated speed rpm : 600

|                                                                                                                                                                                                                                                                                                                        | <u> </u>                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rack travel in mm : 10.20                                                                                                                                                                                                                                                                                              | Rated speed rpm : 520                                                                                                                                                                                                                                                                               |
| Tolerance mm : +- 0.05                                                                                                                                                                                                                                                                                                 | guide sleeve                                                                                                                                                                                                                                                                                        |
| TOTAL COLOR                                                                                                                                                                                                                                                                                                            | + travel mm : 3.23                                                                                                                                                                                                                                                                                  |
| Del. quantity                                                                                                                                                                                                                                                                                                          | + Tolerance mm : +- 0.25                                                                                                                                                                                                                                                                            |
| cm3/1000 strokes : 209.0                                                                                                                                                                                                                                                                                               | T roter ance min                                                                                                                                                                                                                                                                                    |
| CIID 1000 5 (10xe5 . 203.0                                                                                                                                                                                                                                                                                             | Rated speed rpm : 1073                                                                                                                                                                                                                                                                              |
| Talanasa                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                     |
| Tolerance                                                                                                                                                                                                                                                                                                              | + guide sleeve                                                                                                                                                                                                                                                                                      |
| cm3/1000 strokes : +- 1.0                                                                                                                                                                                                                                                                                              | + travel mm : 10.00                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                        | + Tolerance mm : + 0.25                                                                                                                                                                                                                                                                             |
| Check tolerance                                                                                                                                                                                                                                                                                                        | <b>†</b>                                                                                                                                                                                                                                                                                            |
| cm3/1000s. : +- 4.0                                                                                                                                                                                                                                                                                                    | + Rated speed rpm : 1160                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                        | + guide sleeve                                                                                                                                                                                                                                                                                      |
| Spreed                                                                                                                                                                                                                                                                                                                 | † travel mm : 11.50                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                        | + Tolerance mm : +- 0.50                                                                                                                                                                                                                                                                            |
| Tolerance                                                                                                                                                                                                                                                                                                              | †                                                                                                                                                                                                                                                                                                   |
| cm3/1000 strokes : 6.0                                                                                                                                                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                        | + GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                             |
| Check tolerance                                                                                                                                                                                                                                                                                                        | +                                                                                                                                                                                                                                                                                                   |
| cm3/1000s. : 9.0                                                                                                                                                                                                                                                                                                       | +                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                        | + control lever                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                        | <pre> position degree : − 1  </pre>                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                        | + Rated speed rpm : 1032                                                                                                                                                                                                                                                                            |
| Rated speed rpm : 350                                                                                                                                                                                                                                                                                                  | +                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                        | Rack travel in mm: 13.50                                                                                                                                                                                                                                                                            |
| Rack travel in mm : 4.00                                                                                                                                                                                                                                                                                               | + Tolerance mm : + 2.00                                                                                                                                                                                                                                                                             |
| Tolerance mm : + 0.10                                                                                                                                                                                                                                                                                                  | 1                                                                                                                                                                                                                                                                                                   |
| Del. quantity                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                     |
| cm3/1000 strokes : 14.0                                                                                                                                                                                                                                                                                                | FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                                                                                                                                                |
| Tolerance                                                                                                                                                                                                                                                                                                              | I TOLL LOAD DELIVERY AT TOLL LOAD STOT                                                                                                                                                                                                                                                              |
| cm3/1000 strokes : +- 3.0                                                                                                                                                                                                                                                                                              | Rated speed rpm : 600                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                        | + Aneroid pressure                                                                                                                                                                                                                                                                                  |
| Check tolerance                                                                                                                                                                                                                                                                                                        | + hPa : 500                                                                                                                                                                                                                                                                                         |
| cm3/1000s. : +- 6.0                                                                                                                                                                                                                                                                                                    | (                                                                                                                                                                                                                                                                                                   |
| Spreed                                                                                                                                                                                                                                                                                                                 | + Del. quantity                                                                                                                                                                                                                                                                                     |
| Tolerance                                                                                                                                                                                                                                                                                                              | +       cm3/1000 strokes : 209.0                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                     |
| cm3/1000 strokes : 6.0                                                                                                                                                                                                                                                                                                 | + Tolerance                                                                                                                                                                                                                                                                                         |
| cm3/1000 strokes : 6.0<br>Check tolerance                                                                                                                                                                                                                                                                              | + cm3/1000 strokes : +- 1.0                                                                                                                                                                                                                                                                         |
| cm3/1000 strokes : 6.0                                                                                                                                                                                                                                                                                                 | cm3/1000 strokes : +- 1.0<br>Check tolerance                                                                                                                                                                                                                                                        |
| cm3/1000 strokes : 6.0<br>Check tolerance                                                                                                                                                                                                                                                                              | cm3/1000 strokes : +- 1.0<br>Check tolerance<br>cm3/1000s. : +- 4.0                                                                                                                                                                                                                                 |
| cm3/1000 strokes : 6.0<br>Check tolerance<br>cm3/1000s. : 10.0                                                                                                                                                                                                                                                         | cm3/1000 strokes : +- 1.0<br>Check tolerance<br>- cm3/1000s. : +- 4.0<br>Spreed                                                                                                                                                                                                                     |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance                                                                                                                                                                                                                      |
| cm3/1000 strokes : 6.0<br>Check tolerance<br>cm3/1000s. : 10.0                                                                                                                                                                                                                                                         | cm3/1000 strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 6.0                                                                                                                                                                                             |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance                                                                                                                                                                               |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0                                                                                                                                                                                               |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance                                                                                                                                                                               |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL                                                                                                                                                                                             | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance                                                                                                                                                                               |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR                                                                                                                                                                                                                  | cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0                                                                                                                                                                |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL                                                                                                                                                                                             | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance                                                                                                                                                                               |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958                                                                                                                                                                      | cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER                                                                                                                                                 |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 guide sleeve                                                                                                                                                         | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER control lever                                                                                                                                 |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 guide sleeve travel mm : 7.30                                                                                                                                        | cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER                                                                                                                                                 |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 guide sleeve travel mm : 7.30 Tolerance mm : +- 0.15                                                                                                                 | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER control lever                                                                                                                                 |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 quide sleeve travel mm : 7.30 Tolerance mm : + 0.15  Rated speed rpm : 350                                                                                           | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0                                                                                                        |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 guide sleeve travel mm : 7.30 Tolerance mm : + 0.15  Rated speed rpm : 350 guide sleeve                                                                              | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0                                                                                                        |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 quide sleeve travel mm : 7.30 Tolerance mm : +- 0.15  Rated speed rpm : 350 quide sleeve travel mm : 1.69                                                            | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : +- 4.0                                                                              |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 guide sleeve travel mm : 7.30 Tolerance mm : + 0.15  Rated speed rpm : 350 guide sleeve                                                                              | cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 11.50                                          |
| Cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 quide sleeve travel mm : 7.30 Tolerance mm : +- 0.15  Rated speed rpm : 350 quide sleeve travel mm : 1.69 Tolerance mm : +- 0.20                                     | cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 11.50                                             |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 quide sleeve travel mm : 7.30 Tolerance mm : +- 0.15  Rated speed rpm : 350 quide sleeve travel mm : 1.69 Tolerance mm : +- 0.20  Rated speed rpm : 770              | cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 11.50 Rated speed rpm : 945                       |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 quide sleeve travel mm : 7.30 Tolerance mm : +- 0.15  Rated speed rpm : 350 quide sleeve travel mm : 1.69 Tolerance mm : +- 0.20  Rated speed rpm : 770 quide sleeve | cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 11.50 Rated speed rpm : 945 Tolerance 1/min : + 5 |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 958 quide sleeve travel mm : 7.30 Tolerance mm : +- 0.15  Rated speed rpm : 350 quide sleeve travel mm : 1.69 Tolerance mm : +- 0.20  Rated speed rpm : 770              | cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 11.50 Rated speed rpm : 945                       |

Tolerance 1/min : + 15 : 900 Pressure hPa rack travel mm : 1.20 Tolerance mm : +- 0.10 Rated speed rpm : 1200 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 270 LOW IDLE Check speed 1/min : > 80 control lever position degree : 65.0 Check speed 1/min : < 290 tolerance degree : + 4.0 Setting point w/out bumper spring FUEL DELIVERY CHARACTERISTICS Rated speed rpm : 250 CRT mm min. :> 6.00Aneroid pressure : 1200 hPa Testing: Rated speed rpm : 880 Del. quantity Rated speed rpm cm3/1000 strokes : 238.0 350 rack travel mm : 4.00 Tolerance : +- 0.10 cm3/1000 strokes : +- 3.0 Tolerance mm Check tolerance cm3/1000s.: +- 6.0 Rated speed rpm : 350 TORQUE CONTROL Aneroid pressure Rated speed rpm : 600 rack travel mm : 10.20 Rated speed rpm : 500 Tolerance mm : + 0.05 Del. quantity cm3/1000 strokes : 178.0 Rated speed rpm : 880 rack travel mm : 12.50 Tolerance cm3/1000 strokes : +- 1.0Check tolerance Tolerance mm : +- 0.10 cm3/1000s. : +- 4.0 ANEROID/ALTITUDE COMPENSATOR TEST STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity 2-stage LDA setting cm3/1000 strokes : 270.0 Rated speed rpm 600 Tolerance cm3/1000 strokes : +- 20.0500 Pressure hPa : Check tolerance cm3/1000s. : +- 24.0 MEASUREMENT Pressure hPa : 250 rack travel mm : -0.50 Tolerance mm :  $\leftarrow$  0.05 LOW IDLE Pressure hPa : 800 rack travel mm : 0.80 Tolerance mm : + 0.05 Rated speed rpm : 350

| Rack travel in mm<br>Tolerance mm       | : +- | 4.00<br>0.10 |
|-----------------------------------------|------|--------------|
| Del. quantity cm3/1000 strokes          | :    | 14.0         |
| Tolerance<br>cm3/1000 strokes           | : +- | 3.0          |
| Check tolerance<br>cm3/1000s.<br>Spreed | : +- | 6.0          |
| Tolerance<br>cm3/1000 strokes           | :    | 6.0          |
| Check tolerance cm3/1000s.              | :    | 10.0         |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.06.97 Edition Test oil : ISO 4113

Combination No. : 0 402 648 967

Injection pump

Pump designation : PE8P12OA32OLS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -1K

: 0 421 815 361 Governer no.

Cust. part No. : 9275447

Customer-spec. information Customer : LIEBHERR Motor : D 9408 TI Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.50

Firing order : 1-8-7-2-6 : - 3- 5- 4

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 300.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

|                                                                                                                                     | Tolerance mm : +- 0.25                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Tolerance - cm3/1000 strokes : 5.0 -                                                                                                | Rated speed rpm : 1320<br>guide sleeve                                                                       |
| Check tolerance cm3/1000s. : 9.0                                                                                                    | travel mm : 13.50 Tolerance mm : +- 0.50                                                                     |
| Rated speed rpm : 300                                                                                                               | GUIDE SLEEVE POSITION                                                                                        |
| Rack travel in mm: 5.10 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 23.0 Tolerance cm3/1000 strokes: + 3.0 Check tolerance | control lever position degree : - 1 Rated speed rpm : 1185  Rack travel in mm : 10.80 Tolerance mm : +- 2.70 |
| cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 6.0                                                                         | FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050                                                 |
| Check tolerance cm3/1000s. : 10.0                                                                                                   | Aneroid pressure<br>hPa : 1600<br>Del. quantity                                                              |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR                                                                                         | cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance                                  |
| GUIDE SLEEVE TRAVEL                                                                                                                 | cm3/1000s. : +- 4.0<br>Spreed                                                                                |
| Rated speed rpm : 1117 guide sleeve travel mm : 10.38 Tolerance mm : + 0.25                                                         | Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0                                            |
| Rated speed rpm : 300 - guide sleeve travel mm : 1.69 - Tolerance mm : + 0.25                                                       | CONTROL LEVER  control lever  position degree : 119.D  tolerance degree : +- 4.0                             |
| guide sleeve<br>travel mm : 6.20 -<br>Tolerance mm : + 0.25 -                                                                       | RATED SPEED<br>rack travel mm : 11.75<br>Rated speed rpm : 1110                                              |
| Rated speed rpm : 353 - guide sleeve - travel mm : 2.45 - Tolerance mm : + 0.25 -                                                   | Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : + 15                   |
| Rated speed rpm : 403 - guide sleeve : 3.18 - Tolerance mm : +- 0.25                                                                | rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1300                                          |
| Rated speed rpm : 450 - guide sleeve - travel mm : 3.66 -                                                                           |                                                                                                              |

|                                                             |                                    | † Tolerance mm                                          | : +- 0.20                    |
|-------------------------------------------------------------|------------------------------------|---------------------------------------------------------|------------------------------|
| LOW IDLE                                                    |                                    | +<br>MEASUREMENT                                        |                              |
|                                                             |                                    | Rated speed rpm                                         | : 550                        |
| control lever<br>position degree<br>tolerance degree        | : +- 4.0                           | Pressure hPa<br>rack travel mm<br>Tolerance mm          | : 675<br>: 10.35<br>: + 0.05 |
| Setting point w/o                                           | out bumper spring                  | +<br>Pressure hPa                                       | : 575                        |
| Rated speed rpm                                             | : 200                              | rack travel mm Tolerance mm                             | : 9.75<br>: + 0.15           |
| CRT mm min.                                                 | : > 6.60                           | <u> </u>                                                |                              |
| Testing:                                                    |                                    | FUEL DELIVERY CHAR                                      | ACTERISTICS                  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm           |                                    | Aneroid pressure                                        | <del></del>                  |
| Rated speed rpm                                             | : 400                              | + hPa<br>+ Rated speed rpm<br>+ Del. quantity           | : 1600<br>: 500              |
| TORQUE CONTROL                                              |                                    |                                                         | : 298.0                      |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm           | : 1050<br>: 12.75<br>: +- 0.05     | cm3/1000 strokes Check tolerance cm3/1000s.             | : +- 3.0<br>: +- 6.0         |
| Rated speed rpm                                             | : 500                              | <u> </u>                                                |                              |
| rack travel mm<br>Tolerance mm                              |                                    | Aneroid pressure hPa Rated speed rpm                    | : 1600<br>: 700              |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm           | : 550<br>: 10.50<br>: + 0.10       | Del. quantity cm3/1000 strokes Tolerance                | : 299.0                      |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm           | : 700<br>: 11.40<br>: +- 0.10      | + cm3/1000 strokes<br>+ Check tolerance<br>+ cm3/1000s. | : + 3.0<br>: + 6.0           |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm           | : 950<br>: 12.60<br>: +- 0.15      | + Del. quantity                                         | : -<br>: 550                 |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                        |                                    | 1 000 000 000                                           | : 242.5<br>: + 1.5           |
| SETTING                                                     |                                    | Check tolerance cm3/1000s. Spreed Tolerance             | : +- 4.0                     |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm           | : 550<br>: 1600<br>: 10.50         |                                                         | : 8.0<br>: 12.0              |
| Tolerance mm  Rated speed rpm  Pressure hPa  rack travel mm | : ← 0.10<br>: 550<br>: –<br>: 9.15 | STARTING FUEL DELI                                      | VERY                         |

Rated speed rpm : 100
rack travel mm : 9.15
Tolerance mm : +- 0.30
Del. quantity
cm3/1000 strokes : 160.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 14.0

## LOW IDLE

300 Rated speed rpm : 5.10 Rack travel in mm : Tolerance mm 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s.: +- 6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.06.97 Test oil : ISO 4113

Combination No. : 0 402 648 967A

Injection pump

Pump designation : PE8P12OA32OLS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -1K

Governer no. : 0 421 815 361

Cust. part No. : 9275448

Customer—spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power KW : 400.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-8-7-2-6 :-3-5-4

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 300.0

Tolerance

cm3/1000 strokes : ← 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed

|                                                 | + Tolerance mm : +- 0.25                                          |
|-------------------------------------------------|-------------------------------------------------------------------|
| Tolerance<br>cm3/1000 strokes : 5.0             | Rated speed rpm : 1320                                            |
| Check tolerance cm3/1000s. : 9.0                | + guide sleeve<br>+ travel mm : 13.50<br>+ Tolerance mm : +- 0.50 |
|                                                 |                                                                   |
| Dated and an a 700                              | GUIDE SLEEVE POSITION                                             |
| Rated speed rpm : 300                           | +                                                                 |
| Rack travel in mm : 5.10 Tolerance mm : +- 0.10 | <pre>control lever position degree : - 1</pre>                    |
| Del. quantity<br>cm3/1000 strokes : 23.0        | Rated speed rpm : 1185                                            |
| Tolerance cm3/1000 strokes : + 3.0              | Rack travel in mm : 10.80 Tolerance mm : +- 2.70                  |
| Check tolerance cm3/1000s. : +- 6.0             | Total disc min                                                    |
| Spreed                                          | FULL LOAD DELIVERY AT FULL LOAD STOP                              |
| Tolerance cm3/1000 strokes : 6.0                | Rated speed rpm : 1050                                            |
| Check tolerance cm3/1000s. : 10.0               | + Aneroid pressure<br>+ hPa : 1600                                |
|                                                 | <pre>pel. quantity cm3/1000 strokes : 300.0</pre>                 |
| (B) SETTING OF INJECTION PUMP MOTH GOVERNOR     | + Tolerance<br>+ cm3/1000 strokes : +- 1.0                        |
|                                                 | + Check tolerance<br>- + cm3/1000s. : +- 4.0                      |
| GUIDE SLEEVE TRAVEL                             | + Spreed<br>+ Tolerance                                           |
| Rated speed rpm : 1117<br>guide sleeve          | cm3/1000 strokes : 5.0<br>Check tolerance                         |
| travel mm : 10.38                               | cm3/1000s. : 9.0                                                  |
| Tolerance mm : +- 0.25                          | Ŧ                                                                 |
| Rated speed rpm : 300 guide sleeve              | CONTROL LEVER                                                     |
| travel mm : 1.69 Tolerance mm : + 0.25          | +<br>- control lever                                              |
|                                                 | position degree : 119.0                                           |
| Rated speed rpm : 746 guide sleeve              | tolerance degree : + 4.0                                          |
| travel mm : 6.20 Tolerance mm : +- 0.25         | + RATED SPEED<br>+ rack travel mm : 11.75                         |
| Rated speed rpm : 353                           | + Rated speed rpm : 1110<br>+ Tolerance 1/min : +- 5              |
| guide sleeve<br>travel mm : 2.45                | rack travel mm : 4.00                                             |
| Tolerance mm : +- 0.25                          | + Rated speed rpm : 1200                                          |
| Rated speed rpm : 403                           | +                                                                 |
| guide sleeve<br>travel mm : 3.18                | + rack travel mm : 0.50<br>+ Tolerance mm : + 0.50                |
| Tolerance mm : + 0.25                           | Rated speed rpm : 1300                                            |
| Rated speed rpm : 450 guide sleeve              | ‡                                                                 |
| travel mm : 3.66                                | +                                                                 |

|                                                                   | _                                       |
|-------------------------------------------------------------------|-----------------------------------------|
| LOW IDLE                                                          |                                         |
| control lever<br>position degree<br>tolerance degree              | : 70.0<br>: +- 4.0                      |
| Setting point w/o                                                 | ut bumper spring                        |
| Rated speed rpm                                                   | : 200                                   |
| CRT mm min.                                                       | : > 6.60                                |
| Testing:                                                          |                                         |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                 | : 300<br>: 5.10<br>: +- 0.10            |
| Rated speed rpm                                                   | : 400                                   |
| TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm        | : 1050<br>: 12.75<br>: + 0.05           |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                 | : 500<br>: 10.50<br>: + 0.10            |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                 | : 550<br>: 10.50<br>: ← 0.10            |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                 | : 700<br>: 11.40<br>: ← 0.10            |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                 | : 950<br>: 12.60<br>: ← 0.15            |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                              |                                         |
| SETTING                                                           |                                         |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm | : 550<br>: 1600<br>: 10.50<br>: +- 0.10 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm                 | : 550<br>: -<br>: 9.15                  |

| Tolerance mm                                                                                                              | : + 0.20                     |
|---------------------------------------------------------------------------------------------------------------------------|------------------------------|
| MEASUREMENT                                                                                                               |                              |
| Rated speed rpm                                                                                                           | : 550                        |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                            | : 675<br>: 10.35<br>: + 0.05 |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                            | : 575<br>: 9.75<br>: + 0.15  |
| FUEL DELIVERY CHA                                                                                                         | ARACTERISTICS                |
| Aneroid pressure                                                                                                          |                              |
| hPa<br>Rated speed rpm<br>Del. quantity                                                                                   | : 1600<br>: 500              |
| cm3/1000 strokes                                                                                                          | : 298.0                      |
| Tolerance<br>cm3/1000 strokes                                                                                             | : +- 3.0                     |
| Check tolerance cm3/1000s.                                                                                                | : +- 6.0                     |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. | : 299.0                      |
| Aneroid pressure                                                                                                          |                              |
| hPa<br>Rated speed rpm                                                                                                    | : -<br>: 550                 |
| Del. quantity cm3/1000 strokes                                                                                            | : 242.5                      |
| Tolerance cm3/1000 strokes                                                                                                | : + 1.5                      |
| Check tolerance<br>cm3/1000S.<br>Spreed                                                                                   | : +- 4.0                     |
| Tolerance cm3/1000 strokes                                                                                                | : 8.0                        |
| Check tolerance cm3/1000s.                                                                                                | : 12.0                       |
| STARTING FUEL DEL                                                                                                         | TVFRY                        |

STARTING FUEL DELIVERY

| Rated speed rpm  | : |    | 100   |
|------------------|---|----|-------|
| rack travel mm   | : |    | 9.15  |
| Tolerance mm     | : | +- | 0.30  |
| Del. quantity    |   |    |       |
| cm3/1000 strokes | : |    | 160.0 |
| Tolerance        |   |    |       |
| cm3/1000 strokes | : | +- | 10.0  |
| Check tolerance  |   |    |       |
| cm3/1000s.       | : | +- | 14.0  |
|                  |   |    |       |

# LOW IDLE

| Rated speed rpm                                | :    | 300            |  |
|------------------------------------------------|------|----------------|--|
| TO COT GITTO THE                               | : +- | 5.10<br>- 0.10 |  |
| Del. quantity<br>cm3/1000 strokes<br>Tolerance | :    | 23.0           |  |
| cm3/1000 strokes<br>Check tolerance            | : +- | 3.0            |  |
| cm3/1000s.                                     | : +- | 6.0            |  |
| Tolerance<br>cm3/1000 strokes                  | :    | 6.0            |  |
| Check tolerance cm3/1000s.                     | :    | 10.0           |  |

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.06.97 Test oil : ISO 4113

Combination No. : 0 402 670 809

Injection pump

Pump designation : PE12P12OA320LS7807

: -2

EP type number : 0 412 620 812

Governor

Governer design. : RSV375...950POA535

: -5

Governer no. : 0 421 833 374

Cust. part No. : 022 074 8002

Customer-spec. information
Customer : MB-NFZ
Motor : OM 444 LA

Power KW : 493.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 160 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 12-1-5-9-8

: - 3- 4- 11- 10 : - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance "NW : +- 0.75

Barrel no. : 12

## BASIC SETTING

Rated speed rpm : 950

| 1                                                                 | Aneroid pressure                                                          |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Rack travel in mm : 15.60 Tolerance mm : +- 0.10                  | hPa : 1000                                                                |
|                                                                   | Del. quantity<br>cm3/1000 strokes : 234.0<br>Tolerance                    |
| Del. quantity<br>cm3/1000 strokes : 234.0                         | $cm3/1000$ strokes : $\leftarrow$ 1.0                                     |
| Tolerance cm3/1000 strokes : + 1.0                                | Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance                      |
| Check tolerance cm3/1000s. : + 4.0                                | cm3/1000 strokes : 6.0<br>Check tolerance                                 |
| Spreed                                                            | cm3/1000s. : 10.0                                                         |
| Tolerance + cm3/1000 strokes : 6.0 +                              | CONTROL LEVER                                                             |
| Check tolerance cm3/1000s. : 10.0                                 | control lever position degree : 78.0 tolerance degree : +- 4.0            |
| Rated speed rpm : 375                                             | RATED SPEED<br>rack travel mm : 14.60<br>Rated speed rpm : 995            |
| Rack travel in mm : 6.35 Tolerance mm : + 0.15                    | Tolerance 1/min : +- 5                                                    |
| Del. quantity<br>cm3/1000 strokes : 17.0<br>Tolerance             | rack travel mm : 4.00<br>Rated speed rpm : 1075<br>Tolerance 1/min : +- 5 |
| cm3/1000 strokes : +- 3.0 + Check tolerance cm3/1000s. : +- 6.0 + | rack travel mm : 1.00 Tolerance mm : +- 0.70                              |
| Spreed + Tolerance + cm3/1000 strokes : 8.0 +                     | Rated speed rpm : 1200                                                    |
| Check tolerance cm3/1000s. : 12.0                                 | LOW IDLE                                                                  |
| (B) SETTING OF INJECTION PUMP                                     | LOW TOLL                                                                  |
| WITH GOVERNOR                                                     | <pre>control lever position degree : 68.0 tolerance degree : +- 4.0</pre> |
| GUIDE SLEEVE POSITION                                             | Setting point w/out bumper spring                                         |
| control lever                                                     | Rated speed rpm : 100                                                     |
| position degree : -3 Rated speed rpm : 800                        | CRT mm min. : > 13.00                                                     |
| Rack travel in mm: 0.85 + Tolerance mm: + 0.55 +                  | Testing: Rated speed rpm : 375                                            |
| Totel differ likil                                                | rack travel mm : 6.35 Tolerance mm : + 0.15                               |
| FULL LOAD DELIVERY AT FULL LOAD STOP                              | SET IDLE AUXILIARY SPRING                                                 |
| Rated speed rpm : 950                                             | rack travel mm : 2.00                                                     |

|                                   |                     | Aneroid pressure      |      |
|-----------------------------------|---------------------|-----------------------|------|
| TORQUE CONTROL                    |                     | + hPa                 | •    |
| Rated speed rpm                   | : 950               | Rated speed rpm       | •    |
| rack travel mm                    | : 15.60             | Del. quantity         | •    |
| Tolerance mm                      | : +- 0.10           | cm3/1000 strokes      | •    |
| TO CET GISCE TIME                 | 0.10                | + Tolerance           | •    |
| Rated speed rpm                   | : 600               | + cm3/1000 strokes    | +-   |
| rack travel mm                    |                     | + Check tolerance     |      |
| Tolerance mm                      |                     | + cm3/1000s.          | +-   |
| TOCCI GITICO HAII                 | 0.10                | Spreed                |      |
|                                   |                     | Tolerance             |      |
| ANEROID/ALTITUDE                  |                     | cm3/?000 strokes      | •    |
| COMPENSATOR TEST                  |                     | - Check tolerance     | •    |
| COM ENDATOR TEST                  |                     | + cm3/1000s.          |      |
|                                   |                     | 1                     | •    |
| SETTING                           |                     | 1                     |      |
| 02//1/10                          |                     |                       |      |
| Rated speed rpm                   | : 500               | → STARTING FUEL DELIN | /ERY |
| Pressure hPa                      | : 1000              | +                     |      |
| rack travel mm                    | : 15.60             | Rated speed rpm :     | :    |
| Tolerance mm                      | : ← 0.10            | + Del. quantity       |      |
|                                   |                     | + cm3/1000 strokes :  | •    |
| Rated speed rpm                   | : 500               | + Tolerance           | -    |
| Pressure hPa                      | • -                 | + cm3/1000 strokes :  | +-   |
| rack travel mm                    | 11.00               | + Check tolerance     | ,    |
| Tolerance mm                      | : +- 0.10           | + cm3/1000s. :        | +    |
| rocerance num                     | 0.10                |                       |      |
| MEASUREMENT                       |                     | +                     |      |
|                                   | . 500               | †                     |      |
| Rated speed rpm                   | : 500               | LOW IDLE              |      |
| ressure hPa                       | : 300               | 1                     |      |
| rack travel mm                    | : 11.70             | Rated speed rpm :     |      |
| olerance mm                       | : +- 0.05           | 1 Nated Speed (piii)  | •    |
| Oler arice inin                   | . , 0.05            | Rack travel in mm:    | •    |
| Pressure hPa                      | : 500               | + Tolerance mm        | +-   |
| rack travel mm                    | : 13.80             | Del. quantity         |      |
| Tolerance mm                      | : + 0.10            | - cm3/1000 strokes :  | ,    |
| iore: aire imi                    | 0.70                | Tolerance             | )    |
|                                   |                     | cm3/1000 strokes :    | +    |
|                                   |                     | Check tolerance       | •    |
| FUEL DELIVERY CHA                 | DACTEDISTICS        | cm3/1000s. :          | +-   |
| OCT DELIVER! CH                   | JUMC I ELITO 1170   | - Spreed              | •    |
|                                   |                     | - Spreed Tolerance    |      |
| Inanaid passesses                 |                     | cm3/1000 strokes :    |      |
| Aneroid pressure<br>nPa           | : 1000              | Check tolerance       |      |
|                                   | : 600               | - cm3/1000s. :        |      |
| Rated speed rpm                   | . 000               | I (1115) (1000).      |      |
| Del. quantity<br>cm3/1000 strokes | : 246.0             | I                     |      |
|                                   | . 240.0             | I                     |      |
| Tolerance                         | : +- 1.5            | Ī                     |      |
| cm3/1000 strokes                  | ; 1.5               | <u> </u>              |      |
| Check tolerance                   | : <del>+-</del> 4.5 | + End of test specifi | +    |
| cm3/1000s.                        | <del>• • 4.</del> 5 | T End of test specifi | iail |
| Spreed                            |                     | Ť                     |      |
| Tolerance                         |                     | †                     |      |
| m3/1000 strokes                   | : 8.0               | †                     |      |
| Check tolerance                   | . 40 6              | †                     |      |
| cm3/1000s.                        | : 12.0              | †                     |      |
|                                   |                     | <del></del>           |      |

500

137.0

1.0

4.0

8.0

12.0

100

230.0

10.0

14.0

375

6.35 0.15

17.0

3.0

6.0

8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.06.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 676 819

Injection pump

Pump designation : PE6P12OA32ORS7327 EP type number : 0 412 626 916

Governor

Governer design. : RSV275...1150P5A580

Governer no. : 0 421 833 436

Cust. part No. : 1241744/0

Customer-spec. information Customer : DAF

: RS 200 L AG Motor

Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 160 Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

3.0 x inside diameter :

600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 11.40

Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

| 1                                                     |                                                                      |
|-------------------------------------------------------|----------------------------------------------------------------------|
| Rack travel in mm: 11.35 Tolerance mm: + 0.05         | FULL LOAD DELIVERY AT FULL LOAD STOP                                 |
| Del. quantity cm3/1000 strokes : 167.0                | Rated speed rpm : 1000<br>Aneroid pressure<br>hPa : -                |
| Tolerance cm3/1000 strokes : + 1.0                    | Del. quantity<br>cm3/1000 strokes : 167.0<br>Tolerance               |
| Check tolerance cm3/1000s. : +- 4.0                   | cm3/1000 strokes : +- 1.0<br>Check tolerance<br>cm3/1000s. : +- 4.0  |
| Spreed                                                | Spreed Tolerance                                                     |
| Tolerance cm3/1000 strokes : 5.0                      | cm3/1000 strokes : 5.0<br>Check tolerance<br>cm3/1000s. : 9.0        |
| Check tolerance cm3/1000s. : 9.0                      |                                                                      |
|                                                       | CONTROL LEVER                                                        |
| Rated speed rpm : 275                                 | control lever position degree : 113.0                                |
| Rack travel in mm: 4.70 + Tolerance mm: +- 0.10 +     | tolerance degree : +- 4.0                                            |
| Del. quantity + cm3/1000 strokes : 16.0 + Tolerance + | RATED SPEED rack travel mm : 10.35 Rated speed rpm : 1182            |
| cm3/1000 strokes : + 3.0 + Check tolerance            | Tolerance 1/min : +- 8                                               |
| cm3/1000s. : +- 6.0 + 5preed + Tolerance +-           | rack travel mm : 4.00 Rated speed rpm : 1275 Tolerance 1/min : +- 15 |
| cm3/1000 strokes : 8.0 + Check tolerance              | rack travel mm : 0.85                                                |
| cm3/1000s. : 12.0                                     | Tolerance mm : +- 0.55 Rated speed rpm : 1500                        |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR           | rack travel mm : 4.00 Rated speed rpm : 1285 Tolerance 1/min : + 15  |
| GUIDE SLEEVE POSITION                                 |                                                                      |
| control lever                                         | LOW IDLE                                                             |
| position degree : - 3 Rated speed rpm : 800           | control lever position degree : 80.0                                 |
| Rack travel in mm: 0.50 Tolerance mm: + 0.20          | tolerance degree : +- 4.0                                            |
| governor spring pre-tension +                         | Setting point w/out bumper spring  Rated speed rpm : 275             |
| click setting x : 6.00                                | rack travel mm : 4.20 Tolerance mm : + 0.10                          |

# Testing:

Rated speed rpm : 275 4.70 Tolerance mm : + 0.10

2.00 rack travel mm Rated speed rpm : : +- 30 Tolerance 1/min

TORQUE CONTROL

1000 Rated speed rpm 11.35 rack travel mm : +- 0.05 Tolerance mm

Rated speed rpm : 1150 rack travel mm : 11.35 Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

600 Rated speed rpm : 1000 Pressure hPa 11.35 rack travel mm Tolerance mm : +- 0.05

600 Rated speed rpm Pressure hPa 9.10 rack travel mm : + - 0.10Tolerance mm

### MEASUREMENT

600 Rated speed rpm

340 Pressure hPa rack travel mm 10.75 Tolerance mm : + 0.05

200 Pressure hPa rack travel mm 9.70 Tolerance mm : + 0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 600 Rated speed rpm : Del. quantity

cm3/1000 strokes : 117.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 4.0

### LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.70 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes : +- 3.0Check tolerance

cm3/1000s.

6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24,06.97 Edition tartion : 24.06.97 Test oil : ISO 4113

Combination No. : 0 402 676 8230

Injection pump

Pump designation : PE6P12OA32OLS7885-1 EP type number : 0 412 626 948

Governor

Governer design. : RSV400...1000P1A589

Governer no. : 0 421 833 449

Cust. part No. : 9881286

Customer-spec. information Customer : LIEBHERR

: D 9406 TI-E A3 Motor

Power KW : 258.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

: 1 417 413 047 Overflow valve

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Tolerance l/h: + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-6-3-5-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 13.75

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 265.0

Tolerance

cm3/1000 strokes : +- 1.0

| Check tolerance - cm3/1000s. : +- 4.0 -                                                    | t                                                                                     |
|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                            | CONTROL LEVER                                                                         |
| Spreed                                                                                     | control lever                                                                         |
| Tolerance - cm3/1000 strokes : 5.0 -                                                       | position degree : 106.0<br>tolerance degree : +- 4.0                                  |
| Check tolerance cm3/1000s. : 9.0                                                           | RATED SPEED - rack travel mm : 12.75 - Rated speed rpm : 935 - Tolerance 1/min : +- 5 |
| Rated speed rpm : 400                                                                      | rack travel mm : 4.00                                                                 |
| Rack travel in mm : 5.00 - Tolerance mm : +- 0.10 -                                        | Rated speed rpm : 1010 Tolerance 1/min : +- 15                                        |
| Del. quantity - cm3/1000 strokes : 26.0 - Tolerance -                                      | rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1200                   |
| cm3/1000 strokes : +- 3.0 Check tolerance                                                  | rack travel mm : 4.00                                                                 |
| cm3/1000s. : +- 6.0 5preed                                                                 | Rated speed rpm : 1030<br>Tolerance 1/min : +- 15                                     |
| Tolerance cm3/1000 strokes : 6.0 Check tolerance                                           |                                                                                       |
| cm3/1000s. : 10.0                                                                          | LOW IDLE                                                                              |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR                                                | control lever position degree : 83.0 tolerance degree : +- 4.0                        |
| GUIDE SLEEVE POSITION                                                                      | Setting point w/out bumper spring                                                     |
| control lever position degree : - 3                                                        | Rated speed rpm : 400<br>rack travel mm : 3.50<br>Tolerance mm : +- 0.10              |
| FULL LOAD DELIVERY AT FULL LOAD STOP                                                       | Testing:                                                                              |
| Rated speed rpm : 900 - Aneroid pressure - hPa : 1400 -                                    | Rated speed rpm : 400<br>- rack travel mm : 5.00<br>- Tolerance mm : +- 0.10          |
| Del. quantity cm3/1000 strokes : 265.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance | TORQUE CONTROL Rated speed rpm : 900 rack travel mm : 13.75 Tolerance mm : + 0.05     |
| <pre>cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0</pre>                     | Rated speed rpm : 500<br>- rack travel mm : 13.75<br>- Tolerance mm : +- 0.10         |
| Check tolerance cm3/1000s. : 9.0                                                           | Rated speed rpm : 700<br>- rack travel mm : 13.75<br>- Tolerance mm : +- 0.30         |

|                                                                   |                                                | +             | Del. quantity                                     |                     |
|-------------------------------------------------------------------|------------------------------------------------|---------------|---------------------------------------------------|---------------------|
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                              |                                                | <del></del> ‡ | cm3/1000 strokes<br>Tolerance<br>cm3/1000 strokes |                     |
| COMPENSATOR TEST                                                  |                                                | Ŧ             | Check tolerance cm3/1000s.                        | : +- 4.0            |
| SETTING                                                           |                                                | Ŧ             | Spreed<br>Tolerance                               | 4.0                 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm |                                                | +             | cm3/1000 strokes<br>Check tolerance<br>cm3/1000s. | : 8.0<br>: 12.0     |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm | : 500<br>: -<br>: 11.90<br>: + 0.10            | <u> </u>      | STARTING FUEL DEL                                 | IVERY : 100         |
| MEASUREMENT                                                       |                                                | +             | rack travel mm<br>Tolerance mm                    | : 20.50<br>: + 0.50 |
| Rated speed rpm                                                   | : 500                                          | ‡             | Del. quantity<br>cm3/1000 strokes<br>Tolerance    | : 220.0             |
| Pressure hPa<br>rack travel mm                                    | : 870<br>: 13.40                               | <u> </u>      | cm3/1000 strokes<br>Check tolerance               | : + 10.0            |
| Tolerance mm                                                      | : +- 0.05                                      | +             | cm3/1000s.                                        | : +- 14.0           |
| Pressure hPa<br>rack travel mm                                    | : 740<br>: 12.50<br>: + 0.10                   | +             |                                                   |                     |
| Tolerance mm                                                      | : +- 0.10                                      | Ŧ             | LOW IDLE                                          |                     |
| FUEL DELIVERY CHA                                                 | APACTERISTICS                                  | <u> </u>      | Rated speed rpm                                   | : 400               |
| - TOLE DELIVERY OF                                                | MAGIENTO TO TO TO TO TO TO TO TO TO TO TO TO T | 1             | Rack travel in mm<br>Tolerance mm                 |                     |
| Aneroid pressure hPa                                              | : 1400                                         | +             | Del. quantity cm3/1000 strokes                    |                     |
| Rated speed rpm<br>Del. quantity<br>cm3/1000 strokes              |                                                | †             | Tolerance<br>cm3/1000 strokes<br>Check tolerance  | : +- 3.0            |
| Tolerance cm3/1000 strokes                                        |                                                | Ţ             | cm3/1000s.<br>Spreed                              | : +- 6.0            |
| Check tolerance cm3/1000s.                                        | : +- 6.0                                       | ‡             | Tolerance<br>cm3/1000 strokes                     | : 6.0               |
|                                                                   |                                                | +             | Check tolerance cm3/1000s.                        | : 10.0              |
| Aneroid pressure<br>hPa<br>Rated speed rpm<br>Del. quantity       | : 1400<br>: 700                                | †<br>†        |                                                   |                     |
| cm3/1000 strokes<br>Tolerance                                     | : 272.0                                        | ‡             | End of test specif                                | fication sheet      |
| cm3/1000 strokes<br>Check tolerance                               | : +- 3.0                                       | ‡             |                                                   |                     |
| cm3/1000s.                                                        | : +- 6.0                                       | ‡             |                                                   |                     |
| Aneroid pressure                                                  |                                                | ‡             |                                                   |                     |
| hPa<br>Rated speed rpm                                            | 500                                            | Į             |                                                   |                     |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.06.97 Test oil : ISO 4113

Combination No. : 0 402 673 831

Injection pump

Pump designation : PE8P120A320LS7901 EP type number : 0 412 628 918

Governor

Governer design. : RSV350...1050P0A651

Governer no. : 0 421 833 568

Cust. part No. : 0270745602

Customer-spec. information Customer : MB-NFZ
Motor : 0M442LA
Power KW : 297.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Toterance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3 :-5-4-1

: 0-45-90-135-180 Phasing

: -225-270-315

Tolerance : **←** 0.50

Check

: +- 0.75 tolerance \*NW

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm: 13.40

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 210.0

| Tolerance -                                                                                                                                                                                                                                                                                                                                          | + Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cm3/1000 strokes : + 1.5                                                                                                                                                                                                                                                                                                                             | <del> </del> Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -                                                                                                                                                                                                                                                                                                                                                    | cm3/1000 strokes : 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Check tolerance -                                                                                                                                                                                                                                                                                                                                    | Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cm3/1000s. ; +- 4.5                                                                                                                                                                                                                                                                                                                                  | cm3/1000s. : 9.0                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 110                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Spreed                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| opreed                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Tolongo                                                                                                                                                                                                                                                                                                                                              | CONTROL LEVER                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Tolerance = 5.0                                                                                                                                                                                                                                                                                                                                      | CONTROL LEVER                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| cms/ ludu strokes : 3.0                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                      | control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Check tolerance                                                                                                                                                                                                                                                                                                                                      | position degree : 94.0                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| cm3/1000s. : 9.0                                                                                                                                                                                                                                                                                                                                     | tolerance degree : +- 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1                                                                                                                                                                                                                                                                                                                                                    | RATED SPEED                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                      | rack travel mm : 12.40                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Rated speed rpm : 350                                                                                                                                                                                                                                                                                                                                | Rated speed rpm : 1075                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                      | Tolerance 1/min : +- 5                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Rack travel in mm: 5.30                                                                                                                                                                                                                                                                                                                              | <del> </del>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Tolerance mm : + 0.10                                                                                                                                                                                                                                                                                                                                | rack travel mm : 4.00                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Del. quantity                                                                                                                                                                                                                                                                                                                                        | Rated speed rpm : 1150                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| cm3/1000 strokes : 19.0                                                                                                                                                                                                                                                                                                                              | Tolerance 1/min : +- 5                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Tolerance -                                                                                                                                                                                                                                                                                                                                          | +                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| cm3/1000 strokes : +- 3.0                                                                                                                                                                                                                                                                                                                            | rack travel mm : 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Check tolerance                                                                                                                                                                                                                                                                                                                                      | Tolerance mm : +- 0.55                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| cm3/1000s. : +- 6.0                                                                                                                                                                                                                                                                                                                                  | Rated speed rpm : 1400                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Spreed                                                                                                                                                                                                                                                                                                                                               | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Tolerance                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cm3/1000 strokes : 8.0                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Check tolerance                                                                                                                                                                                                                                                                                                                                      | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Check tolerance                                                                                                                                                                                                                                                                                                                                      | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| check tolerance cm3/1000s. : 12.0                                                                                                                                                                                                                                                                                                                    | LOW IDLE                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                      | LOW IDLE                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| cm3/1000s. : 12.0 -                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cm3/1000s. : 12.0 - (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                    | control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| cm3/1000s. : 12.0 -                                                                                                                                                                                                                                                                                                                                  | control lever position degree : 70.0                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| cm3/1000s. : 12.0 - (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                    | control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| cm3/1000s. : 12.0 - (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                    | control lever position degree : 70.0 tolerance degree : + 4.0                                                                                                                                                                                                                                                                                                                                                                                                        |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR                                                                                                                                                                                                                                                                                       | control lever position degree : 70.0                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| cm3/1000s. : 12.0 - (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                    | control lever position degree : 70.0 tolerance degree : + 4.0 Setting point w/out bumper spring                                                                                                                                                                                                                                                                                                                                                                      |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR                                                                                                                                                                                                                                                                                       | control lever position degree : 70.0 tolerance degree : + 4.0                                                                                                                                                                                                                                                                                                                                                                                                        |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100                                                                                                                                                                                                                                                                                                                                              |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever                                                                                                                                                                                                                                                 | control lever position degree : 70.0 tolerance degree : + 4.0 Setting point w/out bumper spring                                                                                                                                                                                                                                                                                                                                                                      |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                | control lever position degree : 70.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50                                                                                                                                                                                                                                                                                                                       |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3                                                                                                                                                                                                                           | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100                                                                                                                                                                                                                                                                                                                                              |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring                                                                                                                                                                                                          | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:                                                                                                                                                                                                                                                                                                               |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension                                                                                                                                                                                              | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 100  CRT mm min. :> 19.50  Testing: Rated speed rpm : 350                                                                                                                                                                                                                                                                                         |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring                                                                                                                                                                                                          | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30                                                                                                                                                                                                                                                                 |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension                                                                                                                                                                                              | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 100  CRT mm min. :> 19.50  Testing: Rated speed rpm : 350                                                                                                                                                                                                                                                                                         |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50                                                                                                                                                                       | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10                                                                                                                                                                                                                                           |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension                                                                                                                                                                                              | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00                                                                                                                                                                                                                    |
| Cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                 | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400                                                                                                                                                                                              |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030                                                                                                         | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00                                                                                                                                                                                                                    |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030 Aneroid pressure                                                                                        | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30                                                                                                                                                                       |
| cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030                                                                                                         | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400                                                                                                                                                                                              |
| Cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030 Aneroid pressure hPa : 1200 Del. quantity                                                               | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30  SET IDLE AUXILIARY SPRING                                                                                                                                            |
| Cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030 Aneroid pressure hPa : 1200                                                                             | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30                                                                                                                                                                       |
| Cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030 Aneroid pressure hPa : 1200 Del. quantity                                                               | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30  SET IDLE AUXILIARY SPRING                                                                                                                                            |
| Cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 210.0                                      | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30  SET IDLE AUXILIARY SPRING                                                                                                                                            |
| Cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 210.0 Tolerance                            | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30  SET IDLE AUXILIARY SPRING  rack travel mm : 2.00  CRT mm min. : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30  SET IDLE AUXILIARY SPRING  rack travel mm : 2.00 |
| Cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : - 3  governor spring pre-tension click setting x : 3.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1030 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 210.0  Tolerance cm3/1000 strokes : +- 1.5 | control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 30  SET IDLE AUXILIARY SPRING rack travel mm : 2.00                                                                                                                      |

| rack travel mm<br>Tolerance mm                   |                    | ‡             | Del. quantity<br>cm3/1000 strokes<br>Tolerance | : 143.0             |
|--------------------------------------------------|--------------------|---------------|------------------------------------------------|---------------------|
| Rated speed rpm<br>rack travel mm                |                    | 1             | cm3/1000 strokes<br>Check tolerance            | : +- 1.0            |
| Tolerance mm                                     | : +- 0.10          | +             | cm3/1000S.<br>Spreed                           | : +- 4.0            |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST             |                    | +<br>+<br>+   | Tolerance<br>cm3/1000 strokes                  | : 8.0               |
| SETTING                                          |                    | ‡             | STARTING FUEL DEL                              | IVERY               |
| Rated speed rpm                                  |                    | ‡             | Rated speed rpm                                | : 100               |
| Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 13.70            | Ī             | Del. quantity<br>cm3/1000 strokes<br>Tolerance | : 240.0             |
| Rated speed rpm                                  |                    | $\pm$         | cm3/1000 strokes<br>Check tolerance            | : + 15.0            |
| Pressure hPa<br>rack travel mm                   | : -<br>: 9.35      | 1             | cm3/1000s.                                     | : <del>-</del> 19.0 |
| Tolerance mm                                     |                    | ‡             |                                                |                     |
| MEASUREMENT                                      |                    | +             | LOW IDLE                                       |                     |
| Rated speed rpm                                  | : 500              | ‡             | Rated speed rpm                                | : 350               |
| Pressure hPa<br>rack travel mm                   | : 250<br>: 9.70    | +             | Rack travel in mm                              | : 5.30              |
| Tolerance mm                                     | : +- 0.15          | ‡             | Del. quantity                                  | : +- 0.10           |
| Pressure hPa<br>rack travel mm                   | : 500<br>: 11.70   | ‡             | cm3/1000 strokes<br>Tolerance                  |                     |
| Tolerance mm                                     | : +- 0.15          | ‡             | cm3/1000 strokes<br>Check tolerance            |                     |
|                                                  |                    | ‡             | cm3/1000s.<br>Spreed                           | : +- 6.0            |
| FUEL DELIVERY CHA                                | ARACTERISTICS      | ‡             | Tolerance<br>cm3/1000 strokes                  | : 8.0               |
| Aneroid pressure                                 | 1200               | Ť             | Check tolerance cm3/1000S.                     | : 12.0              |
| hPa<br>Rated speed rpm                           | : 1200<br>: 600    | Ŧ             |                                                |                     |
| Del. quantity<br>cm3/1000 strokes                | : 221.0            | Ī             | <del></del>                                    |                     |
| Tolerance<br>cm3/1000 strokes<br>Check tolerance | : +- 1.5           | $\frac{1}{2}$ | End of test speci                              | fication sheet      |
| cm3/1000s.<br>Spreed                             | : <del>←</del> 4.5 | Ī             |                                                |                     |
| Tolerance<br>cm3/1000 strokes                    | : 8.0              | ‡             |                                                |                     |
| Check tolerance cm3/1000s.                       | : 12.0             | ‡             |                                                |                     |
|                                                  |                    | ‡             |                                                |                     |
| Aneroid pressure hPa                             | : -                | ‡             |                                                |                     |
| Rated speed rpm                                  | : 500              | +             |                                                |                     |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.06.97 Edition Edition : 24.06.97 Test oil : ISO 4113

Combination No. : 0 402 678 836

Injection pump

Pump designation : PE8P12OA32OLS7844 EP type number : 0 412 628 860

Governor

Governer design. : RSV550...1050P0A672

Governer no. : 0 421 833 591

Cust. part No. : 0270746402

Customer-spec. information Customer : MB-NFZ Motor : OM442LA Power KW 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity min. L/h : 225
Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00 Tolerance mm : +- 1.00

Firing order : 8-7-2-6-3 :-5-4-1

: 0-45-90-135-180 Phasing

: -225-270-315 Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

| _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | t t                                                |                                       |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------|---------|
| Rack travel in mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                    | · · · · · · · · · · · · · · · · · · · |         |
| Tolerance mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | : <del> 0.05                                </del> | FULL LOAD DELIVERY AT FULL LO         | AD STOP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  |                                       |         |
| Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | _                                                  | Rated speed rpm : 1050                |         |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | : 270.0                                            | Aneroid pressure                      |         |
| cher rood ser ones .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                  | hPa : 1200                            |         |
| Telepope                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |                                       |         |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | · 10                                               | Del. quantity                         |         |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | : +- 1.0 +                                         | cm3/1000 strokes : 270.0              |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    | Tolerance                             |         |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  | cm3/1000 strokes : +- 1.0             |         |
| cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | : <del>+-</del> 4.0 }                              | Check tolerance                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                  | cm3/1000s. : +- 4.0                   |         |
| Spend                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                    | Spreed                                |         |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Ť                                                  |                                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | †                                                  | Tolerance                             |         |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | †                                                  | cm3/1000 strokes : 5.0                |         |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | : 5.0 +                                            | Check tolerance                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  | cm3/1000s. : 9.0                      |         |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    |                                       |         |
| cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 9.0                                                |                                       |         |
| (IIIS/10003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Τ Τ                                                |                                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    | 0017501 15750                         |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  | CONTROL LEVER                         |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  |                                       |         |
| Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 550                                                | control lever                         |         |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1                                                  | position degree : 88.0                |         |
| Rack travel in mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.00                                               | tolerance degree : + 4.0              |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | •                                                  | toterance degree 4.0                  |         |
| =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | + 0.10                                             |                                       |         |
| Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | †                                                  |                                       |         |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 19.0 +                                             | ASSEMBLY GOVERNOR SETTING             |         |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | +                                                  |                                       |         |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | + 3.0                                              | Rated speed rpm : 1070                |         |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                  | Tolerance 1/min : +- 1                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + 6.0                                              | rack travel mm : 14.60                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 7                                                  | rack travet iiiii . 14.00             |         |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | †                                                  |                                       |         |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | †                                                  | Rated speed rpm : 1110                |         |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8.0                                                | Tolerance 1/min : +- 4                |         |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  | rack travel mm : 4.00                 |         |
| cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12.0                                               |                                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                  | rack travel mm : 0.85                 |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    | Tolerance mm : +- 0.55                |         |
| (n) according as 11115                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | TOTAL DUMP                                         |                                       |         |
| (B) SETTING OF INJE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CLION PUMP +                                       | Rated speed rpm : 1200                |         |
| WITH GOVERNOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | +                                                  |                                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  |                                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  | Rated speed rpm : 1071                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    | Tolerance 1/min : +- 1                |         |
| GUIDE SLEEVE POSITI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON 1                                               | rack travel mm : 14.60                |         |
| GOIDE SEEENE 1 OST 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                    | rack eravee initi                     |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ť                                                  | Dated around non-                     |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | †                                                  | Rated speed rpm : 1111                |         |
| control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | +                                                  | Tolerance 1/min : +- 4                |         |
| position degree :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -3 +                                               | rack travel mm : 4.00                 |         |
| Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 800 +                                              |                                       |         |
| The same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same state of the same sta | 1                                                  | rack travel mm : 0.85                 |         |
| Dock topical in mm .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.50                                               | Tolerance mm : +- 0.55                |         |
| Rack travel in mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1 0.50                                             | Doted speed speed 1200                |         |
| Tolerance mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | + U.∠U †                                           | Rated speed rpm : 1200                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  |                                       |         |
| governor spring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  |                                       |         |
| pre-tension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1                                                  | Rated speed rpm : 1072                |         |
| click setting x :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 200 1                                              | Tolerance 1/min : + 1                 |         |
| CLICK SECLING A .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | T                                                  | rack travel mm : 14.60                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>T</b>                                           | TOUR LIGIEL HAII . 14.00              |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                                  |                                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    |                                       |         |

| Rated speed rpm                                    |                             | † Testing:                                                         |
|----------------------------------------------------|-----------------------------|--------------------------------------------------------------------|
| Tolerance 1/min                                    | : +- 4                      | +                                                                  |
| rack travel mm                                     | : 4.00                      | + Rated speed rpm : 550                                            |
|                                                    |                             | rack travel mm : 4.00<br>Tolerance mm : + 0.10                     |
| rack travel mm                                     | : 0.85                      | Tolerance mm : + 0.10                                              |
| Tolerance mm<br>Rated speed rpm                    | : + 0.55                    | 7                                                                  |
| kated speed rpm                                    | : 1200                      | + rack travel mm : 2.00<br>+ Rated speed rpm : 570                 |
|                                                    |                             |                                                                    |
| Datad annual num                                   | ; 1073                      | + Tolerance 1/min : +- 30                                          |
| Rated speed rpm                                    |                             | F SET IDLE AUXILIARY SPRING                                        |
| Tolerance 1/min rack travel mm                     | 14.60                       | T SET IDEC ADVICTANT STRING                                        |
| I den el dece min                                  | , 14,00                     | rack travel mm : 2.00                                              |
| Rated speed rpm                                    | : 1113                      | 1                                                                  |
| Tolerance 1/min                                    | : +- 4                      | <u> </u>                                                           |
| rack travel mm                                     | : 4.00                      | TORQUE CONTROL                                                     |
|                                                    |                             | + Rated speed rpm : 1050                                           |
| rack travel mm                                     | : 0.85                      | + rack travel mm : 15.60<br>+ Tolerance mm : + 0.05                |
| rack travel mm<br>Tolerance sas<br>Rated speed rpm | : <b>←</b> 0.55             | † Tolerance mm : + 0.05                                            |
| Rated speed rpm                                    | : 1200                      | †                                                                  |
|                                                    |                             | Rated speed rpm : 600                                              |
| D.A. J J                                           | . 407/                      | rack travel mm : 15.60                                             |
| Rated speed rpm                                    | : 1074<br>: <del>+-</del> 1 | Tolerance mm : +- 0.10                                             |
| Tolerance 1/min rack travel mm                     | : 14.60                     | T                                                                  |
| rack travet inn                                    | . 14.00                     | T ANEROID/ALTITUDE                                                 |
| Rated speed rpm                                    | : 1114                      | COMPENSATOR TEST                                                   |
| Tolerance 1/min                                    |                             | TOTAL ENDATOR TEST                                                 |
| rack travel mm                                     |                             | 1                                                                  |
|                                                    | •                           | + SETTING                                                          |
| rack travel mm                                     | : 0.85                      | +                                                                  |
| Tolerance mm<br>Rated speed rpm                    | : <b>←</b> 0.55             | Rated speed rpm : 450                                              |
| Rated speed rpm                                    | : 1200                      | Pressure hPa : 1200                                                |
|                                                    |                             | rack travel mm : 15.60                                             |
|                                                    | 4                           | † Tolerance mm : +- 0.10                                           |
| Rated speed rpm                                    | : 1175                      | Posted and decidence of /EO                                        |
| Tolerance 1/min                                    | : + 1                       | Rated speed rpm : 450                                              |
| rack travel mm                                     | : 14.00                     | + Pressure hPa : -<br>+ rack travel mm : 9.75                      |
| Rated speed rpm                                    | : 1115                      | + Pressure hPa : - + rack travel mm : 9.75 + Tolerance mm : + 0.20 |
| Tolerance 1/min                                    | : +- 4                      | Total arice min                                                    |
| rack travel mm                                     |                             | MEASUREMENT                                                        |
| Table Craves man                                   | • 1100                      | +                                                                  |
| rack travel mm                                     | : 0.85                      | Rated speed rpm : 450                                              |
| Tolerance mm                                       |                             | +                                                                  |
|                                                    |                             | + Pressure hPa : 600                                               |
| <del></del>                                        |                             | + rack travel mm : 12.20                                           |
| LOW IDLE                                           |                             | Tolerance mm : +- 0.15                                             |
|                                                    |                             | † Do                                                               |
|                                                    |                             | + Pressure hPa : 800<br>+ rack travel mm : 14.10                   |
| control lever position degree                      | : 70.0                      | + rack travel mm : 14.10<br>+ Tolerance mm : +- 0.20               |
|                                                    |                             |                                                                    |
| tolerance degree                                   | . 7 7.0                     | Ţ                                                                  |
| Setting point w/o                                  | out bumper spring           |                                                                    |
| Joeenia ponie m                                    |                             | FUEL DELIVERY CHARACTERISTICS                                      |
| Rated speed rpm                                    | : 100                       | +                                                                  |
| • • • • • • • • • • • • • • • • • • • •            |                             | <u> </u>                                                           |

Aneroid pressure hPa : 1200

CRT mm min.

: > 19.50

|                                     | : 600               |
|-------------------------------------|---------------------|
| Del. quantity cm3/1000 strokes      | : 287.0             |
| Tolerance                           |                     |
| cm3/1000 strokes<br>Check tolerance | : <b>←</b> 3.0      |
| cm3/1000s.                          | : +- 6.0            |
| <del></del>                         |                     |
| Aneroid pressure<br>hPa             | · -                 |
| Rated speed rpm                     | : 500               |
| Del. quantity cm3/1000 strokes      | : 162.0             |
| Tolerance                           |                     |
| cm3/1000 strokes<br>Check tolerance | : +- 1.0            |
| cm3/1000s.                          | : <del>←</del> 4.0  |
|                                     |                     |
| STARTING FUEL DELI                  | [VERY               |
| Rated speed rpm                     | : 100               |
| Del. quantity<br>cm3/1000 strokes   |                     |
| Tolerance                           | . 200.0             |
| cm3/1000 strokes<br>Check tolerance | : +- 15.0           |
| cm3/1000s.                          | : ← 19.0            |
|                                     |                     |
|                                     |                     |
| LOW IDLE                            |                     |
| Rated speed rpm                     | : 550               |
| Rack travel in mm                   |                     |
| Folerance mm<br>Del. quantity       | : +- 0.10           |
| cm3/1000 strokes                    | : 19.0              |
| Tolerance<br>cm3/1000 strokes       | : <del>+-</del> 3.0 |
| Check tolerance                     |                     |
| cm3/1000s.<br>Spreed                | : +- 6.0            |
| Tolerance                           | : 8.0               |
| Check tolerance                     |                     |
| cm3/1000s.                          | : 12.0              |
|                                     |                     |
|                                     |                     |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

see microcard(s) whoo.

Edition : 29.04.97 Test oil : ISO 4113

Combination No. : 0 402 746 606A

Injection pump

Pump designation : PES6P110A720RS7406

EP type number : 0 412 716 810

Governor

Governer design. : RQV300...1050PA1090

: -1K

Governer no. : 0 421 815 497

Cust. part No. : 9279608

Customer-spec. information

Customer : LIEBHERR
Motor : D 926 TI-E A3

Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 125 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.00Tolerance mm :  $\leftarrow 1.00$ 

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.80 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 205.0

Tolerance

cm3/1000 strokes : +- 1.0

\_\_\_\_\_

| Check tolerance cm3/1000s. : +- 4.0                                                            | <u> </u>                                                                                  |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Spreed                                                                                         | + GUIDE SLEEVE POSITION                                                                   |
| Tolerance cm3/1000 strokes : 5.0                                                               | control lever position degree : - 1 Rated speed rpm : 1180                                |
| Check tolerance cm3/1000s. : 9.0                                                               | Rack travel in mm : 12.80 Tolerance mm : + 2.00                                           |
| Rated speed rpm : 350                                                                          | FULL LOAD DELIVERY AT FULL LOAD STOP                                                      |
| Rack travel in mm : 5.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 25.0 Tolerance | Rated speed rpm : 1050 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 205.0 |
| cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance                   | Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed              |
| cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0                                       | Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0                         |
| (B) SETTING OF INJECTION PUMP<br>WITH GOVERNOR                                                 | CONTROL LEVER                                                                             |
| GUIDE SLEEVE TRAVEL                                                                            | control lever position degree : 116.0                                                     |
| Rated speed rpm : 1102<br>guide sleeve                                                         | tolerance degree : +- 4.0                                                                 |
| travel mm : 10.05 Tolerance mm : + 0.15                                                        | RATED SPEED  rack travel mm : 12.80  Rated speed rpm : 1090                               |
| Rated speed rpm : 350<br>guide sleeve<br>travel mm : 1.86                                      | + Tolerance 1/min : +- 5<br>+ rack travel mm : 4.00                                       |
| Tolerance mm : + 0.20                                                                          | Rated speed rpm : 1195  Tolerance 1/min : +- 15                                           |
| Rated speed rpm : 749<br>guide sleeve                                                          | rack travel mm : 0.50                                                                     |
| travel mm : 6.11 Tolerance mm : + 0.25                                                         | Tolerance mm : +- 0.50 Rated speed rpm : 1300                                             |
| Rated speed rpm : 480<br>guide sleeve                                                          | <del>-</del>                                                                              |
| travel mm : 3.75 Tolerance mm : + 0.25                                                         | LOW IDLE                                                                                  |
| Rated speed rpm : 1330 guide sleeve travel mm : 13.50 Tolerance mm : + 0.50                    | control lever position degree : 71.0 tolerance degree : +- 4.0                            |
|                                                                                                |                                                                                           |

|                                                   |                      | + Tolerance mm                                 | : +- 0.05      |
|---------------------------------------------------|----------------------|------------------------------------------------|----------------|
| Setting point w/o                                 | out bumper spring    | Prossure hPa                                   | • 670          |
| Rated speed rpm                                   | : 250                | Pressure hPa<br>rack travel mm<br>Tolerance mm | : 11.50        |
| CRT mm min.                                       | : > 7.40             | + Tolerance mm                                 | : +- 0.10      |
|                                                   |                      | +                                              |                |
| Testing:                                          |                      | FUEL DELIVERY C                                | HARACTERISTICS |
| Rated speed rpm<br>rack travel mm                 | : 350<br>: 5.20      | <u> </u>                                       |                |
| Tolerance mm                                      | : +- 0.10            | Aneroid pressur                                | e<br>: 1600    |
| Rated speed rpm                                   | : 420                | + Rated speed rpm                              | : 500          |
|                                                   |                      | + Del. quantity<br>+ cm3/1000 stroke           | s : 194.0      |
| TORQUE CONTROL                                    | . 1050               | Tolerance cm3/1000 stroke                      |                |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 13.80              | Check tolerance                                | 5 : 5.0        |
| Tolerance mm                                      | : +- 0.05            | + cm3/1000s.                                   | : +- 6.0       |
| Rated speed rpm                                   | : 500                |                                                | -              |
| rack travel mm<br>Tolerance mm                    | : 10.90<br>: +- 0.15 | + Aneroid pressur<br>+ hPa                     | e<br>: 1600    |
| Dated speed rom                                   | . 800                | hPa Rated speed rpm Del. quantity              | : 800          |
| rack travel mm<br>Tolerance mm                    | : 12.70              | + cm3/1000 stroke                              | s : 201.0      |
| Tolerance mm                                      | : + 0.15             | + Tolerance<br>+ cm3/1000 stroke               | s : +- 3.0     |
| Rated speed rpm                                   |                      | + Check tolerance                              |                |
| rack travel mm<br>Tolerance mm                    | : + 0.10             | + cm3/1000s.                                   | : 6.0          |
| Rated speed rpm                                   | : 600                | + Aneroid pressur                              | e              |
| rack travel mm<br>Tolerance mm                    | : 11.45              | hPa<br>Rated speed rpm                         | : -            |
| roterance num                                     | . += 0.10            | <pre>Del. quantity</pre>                       |                |
| ANEROID/ALTITUDE                                  |                      | + cm3/1000 stroke<br>+ Tolerance               | s : 184.0      |
| COMPENSATOR TEST                                  |                      | cm3/1000 stroke                                |                |
|                                                   |                      | + cm3/1000s.                                   | : +- 4.0       |
| SETTING                                           |                      | + Spreed<br>+ Tolerance                        |                |
| Rated speed rpm                                   | : 1050               | + cm3/1000 stroke                              |                |
| Pressure hPa<br>rack travel mm                    | : 1600<br>: 13.80    | + Check tolerance<br>+ cm3/1000s.              | : 12.0         |
| Tolerance mm                                      | : +- 0.05            | ‡                                              |                |
| Rated speed rpm                                   | : 1050               | CTARTING FUEL S                                | EL TVERY       |
| Pressure hPa<br>rack travel mm                    | : 10.55              | + STARTING FUEL D                              |                |
| Tolerance mm                                      | : +- 0.10            | + Rated speed rpm<br>+ rack travel mm          |                |
| MEASUREMENT                                       |                      | + Tolerance mm                                 |                |
| Rated speed rpm                                   | : 1050               | + Del. quantity<br>+ cm3/1000 stroke           | s : 175.0      |
| Pressure hPa                                      | : 940                | + Tolerance<br>+ cm3/1000 stroke               | s : +- 10.0    |
| rack travel mm                                    | 13.00                | +                                              |                |
|                                                   |                      |                                                |                |

Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 25.0
Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24,06,97 : ISO 4113

Combination No. : 0 402 746 6060

Injection pump

Pump designation : PES6P110A720RS7406 EP type number : 0 412 716 810

Governor

Governer design. : RQV300...1050PA1090

: -1K

Governer no.

: 0 421 815 497

Cust. part No. : 9881520

Customer-spec. information

Customer : LIEBHERR Motor

: D 926 TI-E A3

Power KW

: 240.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Toterance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar :

: +- 0.1

Tolerance bar

Overflow quantity

min. L/h

: 125

Tolerance l/h

: +- 20.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

: 208.5

Tolerance bar

: +- 1.5

L19

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter:

2.0

x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar :  $\leftarrow$  1.0

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.00

Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm :

900

Rack travel in mm: 14.80

Tolerance mm

: +- 0.05

Del. quantity

cm3/1000 strokes : 234.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

| Check tolerance cm3/1000s.                                                                                                                                                                                                                                                                                                                        | : +- 4.0                                                                                                                   |                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Spreed                                                                                                                                                                                                                                                                                                                                            | +                                                                                                                          | GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                   | +                                                                                                                          |                                                                                                                                                                                                                                                                                                 |
| Tolerance<br>cm3/1000 strokes                                                                                                                                                                                                                                                                                                                     | : 5.0                                                                                                                      | control lever<br>position degree : - 1<br>Rated speed rpm : 1179                                                                                                                                                                                                                                |
| Check tolerance cm3/1000s.                                                                                                                                                                                                                                                                                                                        | : 9.0                                                                                                                      | Rack travel in mm : 12.80 Tolerance mm : +- 1.30                                                                                                                                                                                                                                                |
| Rated speed rpm                                                                                                                                                                                                                                                                                                                                   | : 500                                                                                                                      | FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                                                                                                                                            |
| Rack travel in mm                                                                                                                                                                                                                                                                                                                                 | · 5.10                                                                                                                     | Rated speed rpm : 900                                                                                                                                                                                                                                                                           |
| Tolerance mm                                                                                                                                                                                                                                                                                                                                      |                                                                                                                            | Aneroid pressure                                                                                                                                                                                                                                                                                |
| Del. quantity                                                                                                                                                                                                                                                                                                                                     | <u> </u>                                                                                                                   | hPa : 1600                                                                                                                                                                                                                                                                                      |
| cm3/1000 strokes                                                                                                                                                                                                                                                                                                                                  | : 16.0                                                                                                                     | Del. quantity                                                                                                                                                                                                                                                                                   |
| Tolerance<br>cm3/1000 strokes                                                                                                                                                                                                                                                                                                                     | · + 30 I                                                                                                                   | cm3/1000 strokes : 234.0<br>Tolerance                                                                                                                                                                                                                                                           |
| Check tolerance                                                                                                                                                                                                                                                                                                                                   | 1                                                                                                                          | cm3/1000 strokes : +- 1.0                                                                                                                                                                                                                                                                       |
| cm3/1000s.                                                                                                                                                                                                                                                                                                                                        | : +- 6.0                                                                                                                   | Check tolerance                                                                                                                                                                                                                                                                                 |
| Spreed                                                                                                                                                                                                                                                                                                                                            | †                                                                                                                          | cm3/1000s. : +- 4.0                                                                                                                                                                                                                                                                             |
| Tolerance<br>cm3/1000 strokes                                                                                                                                                                                                                                                                                                                     | : 6.0                                                                                                                      | Spreed<br>Tolerance                                                                                                                                                                                                                                                                             |
| Check tolerance                                                                                                                                                                                                                                                                                                                                   |                                                                                                                            | cm3/1000 strokes : 5.0                                                                                                                                                                                                                                                                          |
| cm3/1000s.                                                                                                                                                                                                                                                                                                                                        | : 10.0                                                                                                                     | Check tolerance                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                   | †                                                                                                                          | cm3/1000S. : 9.0                                                                                                                                                                                                                                                                                |
| (B) SETTING OF INJ                                                                                                                                                                                                                                                                                                                                | FCTTON PUMP +                                                                                                              |                                                                                                                                                                                                                                                                                                 |
| WITH GOVERNOR                                                                                                                                                                                                                                                                                                                                     |                                                                                                                            | CONTROL LEVER                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                   | <del></del> ‡                                                                                                              | CONTROL LEVER                                                                                                                                                                                                                                                                                   |
| WITH GOVERNOR  GUIDE SLEEVE TRAVE                                                                                                                                                                                                                                                                                                                 | <u> </u>                                                                                                                   | control lever<br>position degree : 113.0                                                                                                                                                                                                                                                        |
| GUIDE SLEEVE TRAVE                                                                                                                                                                                                                                                                                                                                | <u> </u>                                                                                                                   | control lever                                                                                                                                                                                                                                                                                   |
| GUIDE SLEEVE TRAVE Rated speed rpm guide sleeve                                                                                                                                                                                                                                                                                                   | : 1102                                                                                                                     | control lever position degree : 113.0 tolerance degree : +- 4.0                                                                                                                                                                                                                                 |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm                                                                                                                                                                                                                                                                                        | <u> </u>                                                                                                                   | control lever position degree : 113.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 13.80                                                                                                                                                                                             |
| WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm                                                                                                                                                                                                                                                            | : 1102<br>: 10.05<br>: + 0.15                                                                                              | control lever position degree : 113.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940                                                                                                                                                                       |
| WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm                                                                                                                                                                                                                                           | : 1102<br>: 10.05                                                                                                          | control lever position degree : 113.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 13.80                                                                                                                                                                                             |
| WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve                                                                                                                                                                                                                              | : 1102<br>: 10.05<br>: + 0.15<br>: 350                                                                                     | control lever position degree : 113.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940                                                                                                                                                                       |
| WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm                                                                                                                                                                                                                   | : 1102<br>: 10.05<br>: + 0.15                                                                                              | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090                                                                                                    |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num                                                                                                                                                                                                                     | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20                                                               | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  rack travel mm : 4.00                                                                                                                           |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance nm Tolerance nm                                                                                                                                                                                                         | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86                                                                           | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : + 15                                                                             |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num                                                                                                                                                                                                                     | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20                                                               | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090                                                                                                    |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance nm  Rated speed rpm guide sleeve travel mm Tolerance nm                                                                                                                                                                 | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20                                                               | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : + 15  rack travel mm : 0.50                                                      |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance mm                                                                                                          | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20<br>: 749<br>: 6.11<br>: + 0.25                                | control lever position degree : 113.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : +- 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : +- 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : +- 0.50        |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm                                                                                         | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20<br>: 749<br>: 6.11                                            | control lever position degree : 113.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : +- 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : +- 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : +- 0.50        |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance mm                                                                                                          | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20<br>: 749<br>: 6.11<br>: + 0.25<br>: 480<br>: 3.75             | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Rated speed rpm : 1150           |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve                                                                            | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20<br>: 749<br>: 6.11<br>: + 0.25<br>: 480                       | control lever position degree : 113.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : +- 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : +- 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : +- 0.50        |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Tolerance mm                                                                                             | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20<br>: 749<br>: 6.11<br>: + 0.25<br>: 480<br>: 3.75<br>: + 0.25 | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Rated speed rpm : 1150           |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Tolerance mm                                                                                             | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20<br>: 749<br>: 6.11<br>: + 0.25<br>: 480<br>: 3.75             | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Rated speed rpm : 1150           |
| GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance num  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm | : 1102<br>: 10.05<br>: + 0.15<br>: 350<br>: 1.86<br>: + 0.20<br>: 749<br>: 6.11<br>: + 0.25<br>: 480<br>: 3.75<br>: + 0.25 | control lever position degree : 113.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 13.80 Rated speed rpm : 940 Tolerance 1/min : + 5  ruck travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Rated speed rpm : 1150  LOW IDLE |

| Setting point w/c                                                   | out bumper spring             | + Pressure hPa<br>+ rack travel mm<br>+ Tolerance mm                                           | : 900<br>: 12.<br>: + 0. |
|---------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------|--------------------------|
| Rated speed rpm                                                     | : 400                         | T rocer arice min                                                                              | 0.                       |
| CRT mm min.                                                         | : > 7.50                      | FUEL DELTUEDY CIL                                                                              | ADACTEDIC                |
| Testing:                                                            |                               | + FUEL DELIVERY CH                                                                             | AKAC LEKTO               |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 5.10                        | Aneroid pressure hPa Rated speed rpm Del. quantity                                             | : 1600<br>: 500          |
| FORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Folerance mm |                               | - + cm3/1000 strokes<br>+ Tolerance<br>- cm3/1000 strokes<br>- Check tolerance<br>- cm3/1000s. | : +- 3                   |
| Rated speed rpm<br>rack travel mm<br>Folerance mm                   |                               | Aneroid pressure hPa Rated speed rpm                                                           | : 1600<br>: 800          |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 14.70                       | Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes                                      | : 245                    |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 700<br>: 14.20<br>: +- 0.10 | Check tolerance cm3/1000s.                                                                     |                          |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 13.85                       | Aneroid pressure hPa Rated speed rpm Del. quantity                                             |                          |
| NNEROID/ALTITUDE<br>COMPENSATOR TEST                                |                               | - + cm3/1000 strokes<br>+ Tolerance<br>+ cm3/1000 strokes<br>+ Check tolerance                 | : +- 1                   |
| SETTING                                                             |                               | + cm3/1000s.                                                                                   | : +- 4                   |
| Rated speed rpm<br>Pressure hPa<br>Pack travel mm                   | : 900<br>: 1600<br>: 14.80    | STARTING FUEL DEL                                                                              |                          |
| olerance mm<br>ated speed rpm<br>ressure hPa                        | : + 0.05<br>: 900             | Rated speed rpm rack travel mm Tolerance mm Del. quantity                                      | : 100<br>: 11.<br>: + 0. |
| ressure hra<br>rack travel mm<br>Tolerance mm                       | : 12.10<br>: + 0.15           | cm3/1000 strokes Tolerance cm3/1000 strokes                                                    |                          |
| EASUREMENT                                                          |                               | Check tolerance cm3/1000s.                                                                     | : +- 14                  |
| Rated speed rpm                                                     | : 900                         | <del> </del>                                                                                   |                          |
| ressure hPa<br>ack travel mm<br>olerance mm                         | : 1100<br>: 13.70<br>: + 0.10 | LOW IDLE                                                                                       |                          |

| FUEL DELIVERY CHA                   |                      |
|-------------------------------------|----------------------|
| Aneroid pressure<br>hPa             | : 1600               |
| Rated speed rpm<br>Del. quantity    | : 500                |
| cm3/1000 strokes<br>Tolerance       | : 266.0              |
| cm3/1000 strokes                    | : +- 3.0             |
| Check tolerance<br>cm3/1000S.       | : +- 6.0             |
| Aneroid pressure                    | 4.00                 |
| hPa<br>Rated speed rpm              | : 1600<br>: 800      |
| Del. quantity<br>cm3/1000 strokes   | : 245.0              |
| Tolerance<br>cm3/1000 strokes       | : +- 3.0             |
| Check tolerance cm3/1000S.          | : +- 6.0             |
|                                     |                      |
| Aneroid pressure                    |                      |
| hPa<br>Rated speed rpm              | : 500                |
| Del. quantity<br>cm3/1000 strokes   | : 225.0              |
| Tolerance<br>cm3/1000 strokes       | : +- 1.0             |
| Check tolerance<br>cm3/1000S.       | : +- 4.0             |
|                                     |                      |
| STARTING FUEL DEL                   | IVERY                |
| Rated speed rpm                     | : 100                |
| rack travel mm<br>Folerance mm      | : 11.60<br>: +- 0.20 |
| Del. quantity                       |                      |
| cm3/1000 strokes<br>Tolerance       |                      |
| cm3/1000 strokes<br>Check tolerance | : +- 10.0            |
| cm3/1000s.                          | : +- 14.0            |

| :         | 500            |                                                             |
|-----------|----------------|-------------------------------------------------------------|
| :<br>: +- | 5.10<br>- 0.10 |                                                             |
| :         | 16.0           |                                                             |
| : +-      | - 3.0          |                                                             |
| : +-      | - 6.0          |                                                             |
| :         | 6.0            |                                                             |
| :         | 10.0           |                                                             |
|           | :              | : 5.10<br>: + 0.10<br>: 16.0<br>: + 3.0<br>: + 6.0<br>: 6.0 |

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.06.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 746 606F

Injection pump

Pump designation : PES6P110A720RS7406 EP type number : 0 412 716 810

Governor

Governer design. : RQV300...1050PA1090

: -1K

: 0 421 815 497 Governer no.

Cust. part No. : 9882886

Customer-spec. information Customer : LIEBHERR : D 926 TI-E A3 Motor

Power KW : 234.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 125 Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 : **←** 1.5 Tolerance bar

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05 Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300 : +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.80

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 234.0

Tolerance

cm3/1000 strokes : +- 1.0

| Check tolerance cm3/1000s. : +- 4.0                                                  |                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Spreed                                                                               | GUIDE SLEEVE POSITION                                                           |
| Tolerance cm3/1000 strokes : 5.0                                                     | + control lever<br>+ position degree : - 1<br>+ Rated speed rpm : 1179          |
| Check tolerance cm3/1000s. : 9.0                                                     | Rack travel in mm : 12.80 Tolerance mm : +- 1.30                                |
| Rated speed rpm : 400                                                                | FULL LOAD DELIVERY AT FULL LOAD STOP                                            |
| Rack travel in mm : 5.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 16.0 | Rated speed rpm : 900 Aneroid pressure hPa : 1600 Del. quantity                 |
| Tolerance cm3/1000 strokes : + 3.0                                                   | + cm3/1000 strokes : 234.0<br>+ Tolerance                                       |
| Check tolerance cm3/1000s. : +- 6.0                                                  | + cm3/1000 strokes : +- 1.0<br>+ Check tolerance                                |
| Spreed Tolerance cm3/1000 strokes : 6.0                                              | + cm3/1000S. : + 4.0<br>- Spreed<br>- Tolerance                                 |
| Check tolerance cm3/1000s. : 10.0                                                    | + cm3/1000 strokes : 5.0<br>+ Check tolerance                                   |
| (1137 1333)                                                                          | cm3/1000s. : 9.0                                                                |
| (B) SETTING OF INJECTION PUMP<br>WITH GOVERNOR                                       | CONTROL LEVER                                                                   |
| GUIDE SLEEVE TRAVEL                                                                  | control lever                                                                   |
| Rated speed rpm : 1102<br>guide sleeve                                               | + position degree : 113.0<br>+ tolerance degree : +- 4.0<br>+                   |
| travel mm : 10.05 Tolerance mm : + 0.15                                              | + RATED SPEED<br>+ rack travel mm : 13.80<br>+ Rated speed rpm : 940            |
| Rated speed rpm : 350<br>guide sleeve                                                | Tolerance 1/min : +- 5                                                          |
| travel mm : 1.86 Tolerance mm : +- 0.20                                              | + rack travel mm : 4.00<br>+ Rated speed rpm : 1090<br>+ Tolerance 1/min : + 15 |
| Rated speed rpm : 749 guide sleeve                                                   | rack travel mm : 0.50                                                           |
| travel mm : 6.11 Tolerance mm : + 0.25                                               | Tolerance mm : + 0.50<br>Rated speed rpm : 1150                                 |
| Rated speed rpm : 480                                                                | †                                                                               |
|                                                                                      | ‡                                                                               |
| guide sleeve travel mm : 3.75 Tolerance mm : + 0.25                                  | LOW IDLE                                                                        |
| guide sleeve<br>travel mm : 3.75                                                     | LOW IDLE  control lever                                                         |

| Setting point w/o                                                    | out bumper spring<br>: 300             | Pressure hPa : 900 rack travel mm : 12.40 Tolerance mm : +- 0.10                                                      |
|----------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| CRT mm min.<br>Testing:                                              | : > 7.50                               | FUEL DELIVERY CHARACTERISTICS                                                                                         |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                    | : 400<br>: 5.10<br>: +- 0.10           | Aneroid pressure hPa : 1600 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 266.0                              |
| TORQUE CONTROL Rated speed rpm reck travel mm Tolerance mm           | : 14.80<br>: +- 0.05                   | Tolerance<br>- cm3/1000 strokes : +- 3.0<br>- Check tolerance<br>- cm3/1000S. : +- 6.0                                |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                    |                                        | Aneroid pressure hPa : 1600 Rated speed rpm : 800                                                                     |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm<br>Rated speed rpm |                                        | <pre>Del. quantity     cm3/1000 strokes : 245.0     Tolerance     cm3/1000 strokes : +- 3.0     Check tolerance</pre> |
| rack travel mm<br>Tolerance mm                                       | : 14.20<br>: + 0.10                    | cm3/1000s. : + 6.0  Aneroid pressure                                                                                  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                    | : 13.85<br>: + 0.15                    | hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 225.0 Tolerance                                        |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST<br>SETTING                      |                                        | cm3/1000 strokes : +- 1.0<br>Check tolerance<br>cm3/1000s. : +- 4.0                                                   |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm    | : 900<br>: 1600<br>: 14.80<br>: + 0.05 | STARTING FUEL DELIVERY  Rated speed rpm : 100  rack travel mm : 11.60                                                 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm    | : -<br>: 12.10                         | Tolerance mm : + 0.20  Del. quantity  cm3/1000 strokes : 225.0  Tolerance  cm3/1000 strokes : + 10.0                  |
| MEASUREMENT Rated speed rpm                                          | : 900                                  | + Check tolerance<br>+ cm3/1000s. : +- 14.0                                                                           |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                       | : 1100<br>: 13.70<br>: + 0.10          | LOW IDLE                                                                                                              |

| Rated speed rpm                                    | : |    | 400          |
|----------------------------------------------------|---|----|--------------|
| Rack travel in mm<br>Tolerance mm<br>Del. quantity | : | +- | 5.10<br>0.10 |
| cm3/1000 strokes                                   | : |    | 16.0         |
| cm3/1000 strokes<br>Check tolerance                | : | +- | 3.0          |
| cm3/1000s.<br>Spreed                               | : | +  | 6.0          |
| Tolerance<br>cm3/1000 strokes<br>Check tolerance   | : |    | 6.0          |
| cm3/1000s.                                         | : |    | 10.0         |

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.09.95 Test oil : ISO 4113

Combination No. : 0 402 746 959

Injection pump

Pump designation : PES6P120A720RS7292

: -1

EP type number : 0 412 726 939

Governor

Governer design. : RQV350...1150PA1104K

Governer no. : 0 421 815 368

Cust. part No. : 0250741402

Customer—spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 172.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 3.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.40 Tolerance mm : + 0.05

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ,                                       | مريد المراجعة                                           |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------|-----|
| Dol guantitu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         | - guide sleeve<br>- travel mm : 3.09                    |     |
| Del. quantity<br>cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 280.0                                   | - Tolerance mm : + 0.25                                 |     |
| Tolerance cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | + 1.0                                   | - Rated speed rpm : 1480<br>- guide sleeve              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         | - travel mm : 13.50                                     |     |
| Check tolerance cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | + 4.0                                   | - Tolerance mm : +- 0.50                                |     |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         | - GUIDE SLEEVE POSITION                                 |     |
| Tolerance<br>cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8.0                                     | -<br>- control lever                                    |     |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         | - position degree : - 1<br>- Rated speed rpm : 1329     |     |
| cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12.0                                    | · · · · · · · · · · · · · · · · · · ·                   |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         | - Rack travel in mm : 13.25<br>- Tolerance mm : +- 1.30 |     |
| Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 350                                     |                                                         |     |
| rated speed rpill .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 330                                     | - FULL LOAD DELIVERY AT FULL LOAD                       | ) ! |
| Rack travel in mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.00                                    | -                                                       |     |
| Tolerance mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | + 0.10 →                                | - Rated speed rpm : 1150                                |     |
| Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | +                                       | Aneroid pressure                                        |     |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 13.0                                    | - hPa : 1500                                            |     |
| Tolerance cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | +- 3.0                                  | - Del. quantity<br>- cm3/1000 strokes : 280.0           |     |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 7- 3.0                                  | - Tolerance                                             |     |
| cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>←</b> 6.0                            | - cm3/1000 strokes : +- 1.0                             |     |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | +                                       | - Check tolerance                                       |     |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | +                                       | -  cm3/1000s. : +- 4.0                                  |     |
| cm3/1000 strokes :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4.0                                     | - Spreed                                                |     |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | • • • • • • • • • • • • • • • • • • • • | Tolerance                                               |     |
| cm3/1000s. :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8.0                                     | - cm3/1000 strokes : 8.0<br>- Check tolerance           |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I                                       | - cm3/1000s. : 12.0                                     |     |
| (B) SETTING OF INJE WITH GOVERNOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CTION PUMP                              |                                                         |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | †                                       | ACNITROL LEVER                                          |     |
| GUIDE SLEEVE TRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         | - CONTROL LEVER                                         |     |
| Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1205                                    | control lever position degree : 109.0                   |     |
| guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1203                                    | tolerance degree : +- 4.0                               |     |
| travel mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 9.35                                    |                                                         |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>←</b> 0.15                           | RATED SPEED                                             |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                                       | rack travel mm : 13.40                                  |     |
| Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 350                                     | Rated speed rpm : 1195                                  |     |
| guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 157                                     | Tolerance 1/min : + 5                                   |     |
| travel mm : Tolerance mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.53 + 0.20 +                           | rack travel mm : 4.00                                   |     |
| roterance min .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | T 0.20                                  | Rated speed rpm : 1300                                  |     |
| Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 855                                     | Tolerance 1/min : - 15                                  |     |
| guide sleeve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | +                                       |                                                         |     |
| travel mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5.56                                    | rack travel mm : 0.70                                   |     |
| Tolerance mm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | + 0.25                                  | Tolerance mm : +- 0.70 Rated speed rpm : 1430           |     |
| Rated speed rpm :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 540                                     | haced speed (pill . 1450                                |     |
| The same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the sa |                                         |                                                         |     |

STOP

| ·                                                                   |                                          |
|---------------------------------------------------------------------|------------------------------------------|
| LOW IDLE                                                            |                                          |
| control lever<br>position degree<br>tolerance degree                | : 65.0<br>: +- 4.0                       |
| Setting point w/o                                                   | ut bumper spring                         |
| Rated speed rpm                                                     | : 250                                    |
| CRT mm min.                                                         | : > 6.88                                 |
| Testing:                                                            |                                          |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 350<br>: 6.00<br>: + 0.10              |
| Rated speed rpm                                                     | : 400                                    |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 1150<br>: 14.40<br>: ← 0.05            |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 950<br>: 14.40<br>: + 0.10             |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   |                                          |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 600<br>: 13.40<br>: + 0.10             |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                                |                                          |
| SETTING                                                             |                                          |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 1150<br>: 1500<br>: 14.40<br>: +- 0.05 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 1150<br>: -<br>: 10.40<br>: + 0.15     |
| MEASUREMENT                                                         |                                          |
|                                                                     |                                          |

| Rated speed rpm                                      | : 1150                         |
|------------------------------------------------------|--------------------------------|
| Pressure hPa<br>rack travel mm<br>Tolerance mm       | : 1050<br>: 13.60<br>: +- 0.05 |
| Pressure hPa<br>rack travel mm<br>Tolerance mm       | : 450<br>: 11.30<br>: +- 0.10  |
| Start interlock                                      |                                |
| Rated speed rpm<br>Rated speed rpm                   | : > 100<br>: < 270             |
| Check<br>speed 1/min<br>Check                        | : > 80                         |
| speed 1/min                                          | : < 290                        |
| FUEL DELIVERY CHA                                    | RACTERISTICS                   |
| Aneroid pressure<br>hPa<br>Rated speed rpm           | : 1500<br>: 750                |
| Del. quantity cm3/1000 strokes                       |                                |
| Tolerance<br>cm3/1000 strokes<br>Check tolerance     | : 2.0                          |
| chi3/1000s.<br>Spreed                                | : +- 5.0                       |
| Tolerance cm3/1000 strokes                           | : 8.0                          |
| Check tolerance cm3/1000s.                           | : 12.0                         |
| Aneroid pressure<br>hPa<br>Rated speed rpm           | : 1500<br>: 600                |
| Del. quantity<br>cm3/1000 strokes<br>Tolerance       | : 283.0                        |
| cm3/1000 strokes<br>Check tolerance                  | : +- 3.0                       |
| cm3/1000s.                                           | : +- 6.0                       |
| Aneroid pressure                                     | : -                            |
| Rated speed rpm<br>Del. quantity<br>cm3/1000 strokes | : 500<br>: 134.0               |
| Tolerance cm3/1000 strokes                           | : +- 1.0                       |
|                                                      |                                |

Check tolerance cm3/1000s. : +- 4.0

## STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100 rack travel mm : 13.60 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 15.0 Check tolerance cm3/1000s. : + 19.0

## LOW IDLE

Rated speed rpm : 350 Rack travel in mm : 6.00 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : + 3.0Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/

See microcard(s) W400/...

Edition : 22.09.95 Test oil : ISO 4113

Combination No. : 0 402 746 960

Injection pump

Pump designation : PES6P120A720RS7292

: -1

EP type number : 0 412 726 939

Governor

Governer design. : RQV350...1150PA1104

: -1K

Governer no. : 0 421 815 371

Cust. part No. : 0250741302

Customer—spec. information Customer : MB—NFZ Motor : OM366LA Power KW : 157.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 3.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

-----

MO3

|                                                  | <b>+</b>                               |
|--------------------------------------------------|----------------------------------------|
| Rack travel in mm : 14.40 Tolerance mm : +- 0.05 | Rated speed rpm : 540 guide sleeve     |
| roterance mm : += 0.03                           | travel mm : 3.09                       |
| Del. quantity                                    | Tolerance mm : +- 0.25                 |
| cm3/1000 strokes : 280.0                         | 10001 01100 11111                      |
|                                                  | + Rated speed rpm : 1480               |
| Tolerance                                        | + guide sleeve                         |
| cm3/1000 strokes : + 1.0                         | + travel mm : 13.50                    |
|                                                  | + Tolerance mm : +- 0.50               |
| Check tolerance                                  |                                        |
| cm3/1000s. : ← 4.0                               |                                        |
|                                                  | - GUIDE SLEEVE POSITION                |
| Spreed                                           | +                                      |
|                                                  | 1                                      |
| Tolerance                                        | + control lever                        |
| cm3/1000 strokes : 8.0                           | position degree : - 1                  |
|                                                  | + Rated speed rom : 1331               |
| Check tolerance                                  | +                                      |
| cm3/1000s. : 12.0                                | Rack travel in mm: 13.40               |
|                                                  | + Tolerance mm : +- 1.30               |
| <del></del>                                      | +                                      |
|                                                  |                                        |
| Rated speed rpm : 350                            | + FULL LOAD DELIVERY AT FULL LOAD STOP |
| Rack travel in mm : 6.00                         | Rated speed rpm : 1150                 |
|                                                  |                                        |
| Tolerance mm : + 0.10                            | + Aneroid pressure                     |
| Del. quantity                                    | + hPa : 1500                           |
| cm3/1000 strokes : 13.0                          | Del. quantity                          |
| Tolerance                                        | + cm3/1000 strokes : 280.0             |
| cm3/1000 strokes : + 3.0                         | + Tolerance                            |
| Check tolerance                                  | + cm3/1000 strokes : + 1.0             |
| cm3/1000s. ; +- 6.0                              | + Check tolerance                      |
| Spreed                                           | + cm3/1000s. : +- 4.0                  |
| Tolerance                                        | Spreed                                 |
| cm3/1000 strokes : 4.0                           | + Tolerance                            |
| Check tolerance                                  | + cm3/1000 strokes : 8.0               |
| cm3/1000s. : 8.0                                 | + Check tolerance                      |
|                                                  | + cm3/1000s. : 12.0                    |
| (B) SETTING OF INJECTION PUMP                    | I                                      |
| WITH GOVERNOR                                    |                                        |
|                                                  | CONTROL LEVER                          |
|                                                  | +                                      |
| GUIDE SLEEVE TRAVEL                              | † control lever                        |
|                                                  | position degree : 109.0                |
| Rated speed rpm : 1206                           | tolerance degree : +- 4.0              |
| guide sleeve                                     | +                                      |
| travel mm : 9.35                                 | + RATED SPEED                          |
| Tolerance mm : +- 0.15                           | + rack travel mm : 13.40               |
|                                                  | + Rated speed rpm : 1195               |
| Rated speed rpm : 350                            | Tolerance 1/min : +- 5                 |
| guide sleeve                                     | +                                      |
| travel mm : 1.53                                 | † rack travel mm : 4.00                |
| Tolerance mm : + 0.20                            | + Rated speed rpm : 1305               |
|                                                  | + Tolerance 1/min : +- 15              |
| Rated speed rpm : 855                            | +                                      |
| guide sleeve                                     | † rack travel mm : 0.70                |
| travel mm : 5.56                                 | † Tolerance mm : +- 0.70               |
| Tolerance mm : +- 0.25                           | + Rated speed rpm : 1400               |
|                                                  |                                        |

### LOW IDLE

control lever

position degree : 65.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.88

Testing:

Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150 rack travel mm : 14.40 Tolerance mm : +- 0.05

Rated speed rpm : 950 rack travel mm : 14.25 Tolerance mm : +- 0.10

Rated speed rpm : 750 rack travel mm : 13.70 Tolerance mm : +- 0.10

Rated speed rpm : 600 rack travel mm : 13.20 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 14.40
Tolerance mm : +- 0.05

Rated speed rpm : 1150
Pressure hPa : rack travel mm : 10.50
Tolerance mm : +- 0.15

#### **MEASUREMENT**

Rated speed rpm : 1150

Pressure hPa : 1050 rack travel mm : 13.70 Tolerance mm : + 0.05

Pressure hPa : 400 rack travel mm : 11.30 Tolerance mm : +- 0.15

## Start interlock

Rated speed rpm : > 100 Rated speed rpm : < 270

Check

speed 1/min : > 80

Check

speed 1/min : < 290

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity

cm3/1000 strokes : 285.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance cm3/1000s. : +- 5.0

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Aneroid pressure

hPa : 1500 Rated speed rpm : 600 Del. quantity

cm3/1000 strokes : 277.0

Tolerance

cm3/1000 strokes : + 3.0 Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 143.0

Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0

## STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 13.80
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 175.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 19.0

# LOW IDLE

Rated speed rpm : 350 Rack travel in mm: 6.00 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000S. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.09.95 Edition Test oil : 22.09.95

Combination No. : 0 402 746 961

Injection pump

Pump designation : PES6P120A720RS7292

: -1 EP type number : 0 412 726 939

Governor

Governer design. : RQV350...1150PA1104

: -2K

Governer no. : 0 421 815 372

Cust. part No. : 0250741202

Customer-spec. information Customer : M8-NFZ Motor : OM366LA Power KW : 142.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240 : -300

: +- 0.50 Tolerance

Check

tolerance  $^{\circ}NW$  : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 3.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

M07

|                                                 | 1                                                                      |
|-------------------------------------------------|------------------------------------------------------------------------|
| Rack travel in mm : 14.50 Tolerance mm : + 0.05 | Rated speed rpm : 540 guide sleeve travel mm : 3.09                    |
| Del. quantity<br>cm3/1000 strokes : 277.0       | Tolerance mm : +- 0.25                                                 |
| Tolerance cm3/1000 strokes : + 1.0              | Rated speed rpm : 1480 guide sleeve travel mm : 13.50                  |
| Check tolerance cm3/1000s. : +- 4.0             | Tolerance mm : + 0.50                                                  |
| Spreed                                          | GUIDE SLEEVE POSITION                                                  |
|                                                 | +                                                                      |
| Tolerance cm3/1000 strokes : 8.0                | + control lever<br>+ position degree : - 1<br>+ Rated speed rpm : 1331 |
| Check tolerance cm3/1000s. : 12.0               | Rack travel in mm: 13.50 Tolerance mm: +- 1.30                         |
|                                                 | İ                                                                      |
| Rated speed rpm : 350                           | FULL LOAD DELIVERY AT FULL LOAD STOP                                   |
| Rack travel in mm : 6.00                        | Rated speed rpm : 1150                                                 |
| Tolerance mm : +- 0.10 Del. quantity            | + Aneroid pressure<br>+ hPa : 1500                                     |
| cm3/1000 strokes : 13.0                         | Del. quantity                                                          |
| Tolerance                                       | + cm3/1000 strokes : 277.0                                             |
| cm3/1000 strokes : + 3.0                        | + Tolerance                                                            |
| Check tolerance cm3/1000s. : +- 6.0             | + cm3/1000 strokes : + 1.0<br>+ Check tolerance                        |
| Spreed                                          | - cm3/10C0s. : - 4.0                                                   |
| Tolerance                                       | Spreed                                                                 |
| cm3/1000 strokes : 4.0                          | + Tolerance                                                            |
| Check tolerance cm3/1000s. : 8.0                | + cm3/1000 strokes : 8.0<br>+ Check tolerance                          |
| CHS7 10003 0.0                                  | cm3/1000s. : 12.0                                                      |
| (B) SETTING OF INJECTION PUMP                   | İ                                                                      |
| WITH GOVERNOR                                   |                                                                        |
|                                                 | CONTROL LEVER                                                          |
| GUIDE SLEEVE TRAVEL                             | - control lever                                                        |
|                                                 | position degree : 108.0                                                |
| Rated speed rpm : 1206<br>guide sleeve          | tolerance degree : +- 4.0                                              |
| travel mm : 9.35                                | T RATED SPEED                                                          |
| Tolerance mm : + 0.15                           | + rack travel mm : 13.50                                               |
| 770                                             | Rated speed rpm : 1195                                                 |
| Rated speed rpm : 350 guide sleeve              | Tolerance 1/min : +- 5                                                 |
| travel mm : 1.53                                | rack travel mm : 4.00                                                  |
| Tolerance mm : + 0.20                           | + Rated speed rpm : 1305                                               |
| Rated speed rpm : 855                           | Tolerance 1/min : + 15                                                 |
| guide sleeve                                    | rack travel mm : 0.70                                                  |
| travel mm : 5.56                                | + Tolerance mm : + 0.70                                                |
| Tolerance mm : + 0.25                           | + Rated speed rpm : 1400                                               |

| LOW IDLE                                                            |                                          |
|---------------------------------------------------------------------|------------------------------------------|
| control lever<br>position degree<br>tolerance degree                | : 70.0<br>: +- 4.0                       |
| Setting point w/o                                                   | out bumper spring                        |
| Rated speed rpm                                                     | : 250                                    |
| CRT mm min.                                                         | : > 7.00                                 |
| Testing:                                                            |                                          |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 350<br>: 6.00<br>: ← 0.10              |
| Rated speed rpm                                                     | : 400                                    |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 1150<br>: 14.50<br>: + 0.05            |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 950<br>: 14.30<br>: ← 0.10             |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 750<br>: 13.70<br>: + 0.10             |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 600<br>: 13.30<br>: + 0.10             |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                                |                                          |
| SETTING                                                             |                                          |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 1150<br>: 1500<br>: 14.50<br>: +- 0.05 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 1150<br>: -<br>: 10.90<br>: +- 0.15    |

| Rated speed rpm                                | : 1150                        |
|------------------------------------------------|-------------------------------|
| Pressure hPa<br>rack travel mm<br>Tolerance mm | : 850<br>: 13.90<br>: +- 0.05 |
| Pressure hPa<br>rack travel mm<br>Tolerance mm | : 350<br>: 11.50<br>: + 0.20  |
| Start interlock                                |                               |
| Rated speed rpm<br>Rated speed rpm             | : > 100<br>: < 270            |
| Check<br>speed 1/min<br>Check                  | : > 80                        |
| speed 1/min                                    | : < 290                       |
| FUEL DELIVERY CHA                              | RACTERISTICS                  |
| Aneroid pressure<br>hPa<br>Rated speed rpm     | : 1500<br>: 750               |
| Del. quantity cm3/1000 strokes                 | : 281.0                       |
| Tolerance cm3/1000 strokes                     | : + 2.0                       |
| Check tolerance<br>cm3/1000S.<br>Spreed        | : +- 5.0                      |
| Tolerance cm3/1000 strokes                     | : 8.0                         |
| Check tolerance cm3/1000s.                     | : 12.0                        |
| Aneroid pressure<br>hPa<br>Rated speed rpm     | : 1500<br>: 600               |
| Del. quantity cm3/1000 strokes                 | : 275.0                       |
| Tolerance cm3/1000 strokes                     | : + 3.0                       |
| Check tolerance cm3/1000s.                     | : <del>←</del> 6.0            |
| Aneroid pressure hPa                           | • •                           |
| Rated speed rpm                                | : 500                         |
| Del. quantity cm3/1000 strokes                 | : 155.0                       |

**MEASUREMENT** 

Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : + 4.0 STARTING FUEL DELIVERY Set starting CRT at K-cam. Rated speed rpm : 100 rack travel mm : 13.90
Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 170.0 Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000s. : +- 19.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm: 6.00 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0 End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.09.95 Test oil : ISO 4113

Combination No. : 0 402 746 962

Injection pump

Pump designation : PES6P12OA72ORS7292

: -1 EP type number : 0 412 726 939

Governor

Governer design. : RQV350...1150PA1104

: -3K

Governer no. : 0 421 815 373

Cust. part No. : 0250741102

Customer-spec. information Customer : MB-NFZ Motor : OM366LA Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance  $: \leftarrow 0.50$ 

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 3.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 14.20

M11

| Tolerance mm                        | : +- 0.05    | - guide sleeve<br>- travel mm : 3.09                                   |
|-------------------------------------|--------------|------------------------------------------------------------------------|
| Del. quantity cm3/1000 strokes      | : 271.0      | - Tolerance mm : + 0.25                                                |
| <b>+</b> 1                          |              | - Rated speed rpm : 1480                                               |
| Tolerance<br>cm3/1000 strokes       | : +- 1.0     | - guide sleeve<br>- travel mm : 13.50<br>- Tolerance mm : +- 0.50      |
| Check tolerance cm3/1000s.          | : + 4.0      | - roterance min : +- 0.50                                              |
| CM37 10005.                         |              | - GUIDE SLEEVE POSITION                                                |
| Spreed                              | †            | <u>.</u>                                                               |
| Tolerance<br>cm3/1000 strokes       | : 8.0        | - control lever<br>- position degree : - 1<br>- Rated speed rpm : 1329 |
| Check tolerance                     | 40.5         | -                                                                      |
| cm3/1000s.                          | : 12.ů       | - Rack travel in mm : 13.20<br>- Tolerance mm : +- 1.30<br>-           |
| Rated speed rpm                     | : 350        | - FULL LOAD DELIVERY AT FULL LOAD STOP                                 |
| Rack travel in mm                   |              | - Rated speed rpm : 1150                                               |
| Tolerance mm<br>Del. quantity       | : +- 0.10    | - Aneroid pressure<br>- hPa : 1500                                     |
| cm3/1000 strokes                    | : 13.0       | - Del. quantity                                                        |
| Tolerance                           | +            | - cm3/1000 strokes : 271.0                                             |
| cm3/1000 strokes<br>Check tolerance | : +- 3.0     | - Tolerance<br>- cm3/1000 strokes : +- 1.0                             |
| cm3/1000s.<br>Spreed                | : +- 6.0     | - Check tolerance<br>- cm3/1000s. : +- 4.0                             |
| Tolerance                           | +            | - Spreed                                                               |
| um3/1000 strokes<br>Check tolerance | : 4.0        | - Tolerance<br>- cm3/1000 strokes : 8.0                                |
| cm3/1000s.                          | : 8.0        | - Check tolerance                                                      |
|                                     | 1            | - cm3/1000s. : 12.0                                                    |
| (B) SETTING OF IN                   | JECTION PUMP | -<br>-                                                                 |
| WITH GOVERNOR                       | <u> </u>     | - CONTROL LEVER                                                        |
|                                     |              | - CONTROL LEVER                                                        |
| GUIDE SLEEVE TRAVE                  | EL           | - control lever                                                        |
| Rated speed rpm<br>guide sleeve     | : 1205       | - position degree : 109.0<br>- tolerance degree : +- 4.0               |
| travel mm                           | : 9.35       | - RATED SPEED                                                          |
| Tolerance mm                        | : + 0.15     | - rack travel mm : 13.20                                               |
| Rated speed rpm                     | : 350        | - Rated speed rpm : 1195<br>- Tolerance 1/min : +- 5                   |
| guide sleeve<br>travel mm           | : 1.53       | -<br>- rack travel mm : 4.00                                           |
| Tolerance mm                        | : + 0.20     | - Rated speed rpm : 1300                                               |
| Rated speed rpm                     | : 855        | - Tolerance 1/min : +- 15                                              |
| guide sleeve<br>travel mm           | : 5.56       | - rack travel mm : 0.70<br>- Tolerance mm : +- 0.70                    |
| Tolerance mm                        | : +- 0.25    | - Rated speed rpm : 1400                                               |
| Rated speed rpm                     | : 540        | -<br>-                                                                 |
|                                     |              |                                                                        |

| LOW IDLE                                                            |                                         |
|---------------------------------------------------------------------|-----------------------------------------|
| control lever<br>position degree<br>tolerance degree                | : 65.0<br>: +- 4.0                      |
| Setting point w/o                                                   | ut bumper spring                        |
| Rated speed rpm                                                     | : 250                                   |
| CRT mm min.                                                         | : > 7.00                                |
| Testing:                                                            |                                         |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   |                                         |
| Rated speed rpm                                                     | : 400                                   |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 1150<br>: 14.20<br>: +- 0.05          |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 950<br>: 13.80<br>: +- 0.10           |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 750<br>: 13.20<br>: + 0.10            |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   |                                         |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                                |                                         |
| SETTING                                                             |                                         |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 1150<br>: 1500<br>: 14.20<br>: ← 0.05 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 1150<br>: -<br>: 11.00<br>: +- 0.15   |
| MEASUREMENT                                                         |                                         |
|                                                                     |                                         |

| Rated speed rpm                     | : 1150               |
|-------------------------------------|----------------------|
| Pressure hPa                        | : 850                |
| rack travel mm                      | : 13.50<br>: +- 0.05 |
| Tolerance mm                        | : +- 0.05            |
| Pressure hPa                        | : 350                |
| rack travel mm<br>Tolerance mm      | : 11.70<br>: +- 0.10 |
|                                     |                      |
| Start interlock                     |                      |
| Rated speed rpm                     | : > 100              |
| Rated speed rpm                     | : < 270              |
| Check                               |                      |
| speed 1/min                         | : > 80               |
| Check speed 1/min                   | : < 290              |
| speed (/ii/ii)                      | . \ 270              |
| FUEL DELIVERY CHA                   |                      |
| FOEL DELIVERY CHA                   | RACTERISTICS         |
| Aneroid pressure                    |                      |
| hPa                                 | : 1500               |
| Rated speed rpm                     | : 750                |
| Del. quantity cm3/1000 strokes      | : 262.0              |
| Tolerance                           | . 20                 |
| cm3/1000 strokes<br>Check tolerance | : +- 2.0             |
| cm3/1000S.                          | : +- 5.0             |
| Spreed<br>Tolerance                 |                      |
| cm3/1000 strokes                    | : 8.0                |
| Check tolerance cm3/1000s.          | : 12.0               |
|                                     |                      |
| Aneroid pressure                    | <del></del>          |
| hPa                                 | : 1500               |
| Rated speed rpm<br>Del. quantity    | : 600                |
| cm3/1000 strokes                    | : 256.0              |
| Tolerance cm3/1000 strokes          | : +- 3.0             |
| Check tolerance                     |                      |
| cm3/1000s.                          | : +- 6.0             |
|                                     |                      |
| Aneroid pressure hPa                |                      |
| Rated speed rpm                     | 500                  |
| Del. quantity cm3/1000 strokes      | : 166.0              |
| Tolerance                           |                      |
| cm3/1000 strokes                    | : +- 1.0             |
|                                     |                      |

Check tolerance : +- 4.0 cm3/1000s. STARTING FUEL DELIVERY Set starting CRT at K-cam. Rated speed rpm : 100 rack travel mm : 13.70
Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 158.0 Tolerance cm3/1000 strokes : +- 15.0Check tolerance cm3/1000s. : +- 19.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 6.00 Tolerance mm: : + 0.10 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s.: +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

End of test specification sheet

4

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 23,06,97 : ISO 4113

Combination No. : 0 402 796 041

Injection pump

Pump designation : PES6H110/320RS19 EP type number : 0 412 716 006

Governor

Governer design. : RE36

Governer no. : 0 421 890 374

Cust. part No. : 8192870 PO3 v.04/97

Customer-spec. information

Customer : VOLVO-TRUCK

Motor : D7C : 228.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4(EHAB)

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter :

x inside diameter: 2.0 x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 8.00 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

(B) POSITIONER TESTING

Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR

POSITION

Engine speed min-1:

Setting point

| (P, R and H pump)                                                    |
|----------------------------------------------------------------------|
| Uact V : 3.100<br>CRT mm : 13.00<br>Tolerance mm : +/- 0.05<br>Check |
| tolerance mm : +/- 0.10                                              |
| Check value<br>(P, R and H pump)                                     |
| Uact V : 1.700<br>CRT mm : 6.15<br>Tolerance mm : +/- 0.25           |
| Check tolerance mm : +/- 0.30                                        |
|                                                                      |
| Setting point<br>(M pump)                                            |
| Unct V : 3.100                                                       |
| CRT mm : 12.50<br>Tolerance mm : +/- 0.05                            |
| Check tolerance mm : +/- 0.10                                        |
|                                                                      |
| Check value<br>(M pump)                                              |
| Uact V : 1.700                                                       |
| CRT mm : 5.50                                                        |
| Tolerance mm : +/- 0.25<br>Check                                     |
| tolerance mm : +/- 0.30                                              |
| Stop position                                                        |
| Uact V : Value with                                                  |
| deenergised adjusting magnet<br>and control rod in                   |
| stop position.                                                       |
| CRT mm : 0.75 Tolerance mm : +/- 0.25                                |
| Check tolerance mm : +/- 0.35                                        |
| toter arice in                                                       |
| ENGINE-SPEED SENSOR<br>(All P and R pumps not<br>H and M pumps)      |
| Test with control rod in stop position                               |
| Engine speed min-1: 60                                               |
| Amplitude V : 1.4 Tolerance V : +/- 0.6                              |

Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4 (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 Rated speed rpm 660 Uact V 3.000 Prestroke solenoid 5.30 Stroke mm Del. quantity cm3/1000 strokes : 359.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 11.0 FUEL DELIVERY CHARACTERISTICS 950 Rated speed rpm : TEST POINT L1 300 Rated speed rpm Uact V 1.500 : +- 0.060 Tolerance Volt Check tolerance : +- 0.060 Volt Prestroke solenoid 5.30 Stroke mm Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 strokes : +- 2.0 Spreed Tolerance 5.0 cm3/1000 strokes : Check tolerance cm3/1000s. 8.0 : End of test specification sheet

tolerance V : +/- 1.20

M16

Check

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 22.08.95 : ISO 4113

Combination No. : 0 402 846 059

Injection pump

Pump designation : PE6P120A720RS8026

EP type number : 0 412 826 027

Governor

Governer design. : RQV200...950PA1091K

Governer no. : 0 421 815 984

Cust. part No. : 1355081

Customer-spec. information : SCANIA Customer : DSC1172 Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

251.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

x length mm : 600

per values \_\_\_\_\_

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 12.35

Tolerance mm :  $\leftarrow$  0.05

Rated speed rpm : 250

Rack travel in mm: 4.40 Tolerance mm :  $\leftarrow$  0.10

M17

| Del. quantity                          | + Rated speed rpm : 1060                |
|----------------------------------------|-----------------------------------------|
| cm3/1000 strokes : 16.0                | 1                                       |
| Tolerance                              | Rack travel in mm: 12.50                |
|                                        |                                         |
| cm3/1000 strokes : + 3.0               | + Tolerance mm : +- 1.30                |
| Check tolerance                        | +                                       |
| cm3/1000s. : +- 6.0                    | +                                       |
| Spreed                                 |                                         |
| Tolerance                              | ↓ CONTROL LEVER                         |
| cm3/1000 strokes : 4.0                 | 1                                       |
| Check tolerance                        | control lever                           |
|                                        |                                         |
| cm3/1000s. : 8.0                       | + position degree : 65.0                |
|                                        | + tolerance degree : +- 4.0             |
|                                        | +                                       |
| (B) SETTING OF INJECTION PUMP          | + control lever                         |
| WITH GOVERNOR                          | position degree : 118.0                 |
|                                        | tolerance degree : + 4.0                |
| ************************************** |                                         |
| GUIDE SLEEVE TRAVEL                    | RATED SPEED                             |
| GAIRE AFFAF HUMAFF                     | rack travel mm : 12.50                  |
| Dated aread are a 1000                 |                                         |
| Rated speed rpm : 1008                 | Rated speed rpm : 995                   |
| guide sleeve                           | † Tolerance 1/min : + 5                 |
| travel mm : 9.87                       | + Check                                 |
| Tolerance mm : + 0.15                  | + speed 1/min : + 10                    |
|                                        | +                                       |
| Rated speed rpm : 250                  | + rack travel mm : 4.00                 |
| guide sleeve                           | Rated speed rpm : 1075                  |
| travel mm : 1.26                       | + Tolerance 1/min : +- 15               |
| Tolerance mm : + 0.20                  | Check                                   |
| roterance name : += 0.20               |                                         |
| 200                                    | + speed 1/min : +- 20                   |
| Rated speed rom : 800                  | †                                       |
| guide sleeve                           | † rack travel mm : 0.50                 |
| travel mm : 6.59                       | + Tolerance mm : +- 0.50                |
| Tolerance mm : +- 0.25                 | + Rated speed rpm : 1150                |
|                                        | +                                       |
| Rated speed rpm : 310                  | +                                       |
| guide steeve                           | <del> </del>                            |
| travel mm : 2.00                       |                                         |
| Tolerance mm : + 0.25                  | LOW IDLE                                |
| roterance name                         |                                         |
| Rated speed rom : 360                  | Ţ                                       |
|                                        | T control lover                         |
| guide sleeve                           | control lever                           |
| travel mm : 2.45                       | position degree : 71.0                  |
| Tolerance mm : + 0.25                  | tolerance degree : +- 4.0               |
|                                        | †                                       |
| Rated speed rpm : 520                  | + control lever                         |
| guide sleeve                           | + position degree : 17.0                |
| travel mm : 3.58                       | + tolerance degree : +- 4.0             |
| Tolerance mm : + 0.25                  | 1                                       |
|                                        | Setting point w/out bumper spring       |
| Rated speed rpm : 1200                 | Totaling partie wilder admitted abiling |
|                                        | Rated speed rpm : 150                   |
| guide sleeve                           | Rated speed rpm : 150                   |
| travel mm : 13.50                      | T CDT                                   |
| Tolerance mm : + 0.50                  | + CRT mm min. : > 5.40                  |
|                                        | †                                       |
|                                        | † Testing:                              |
| GUIDE SLEEVE POSITION                  | +                                       |
|                                        | Rated speed rpm : 250                   |
|                                        | + rack travel mm : 4.40                 |
| control lever                          | Tolerance mm : +- 0.10                  |
| position degree : - 1                  | 1 10001 01100 11811                     |
| position degree : - 1                  | T                                       |
|                                        |                                         |

| Rated speed rpm                                                     | : 325                                   |
|---------------------------------------------------------------------|-----------------------------------------|
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 700<br>: 12.35<br>: + 0.05            |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 950<br>: 13.50<br>: +- 0.10           |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                   | : 300<br>: 10.75<br>: + 0.20            |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                                |                                         |
| SETTING                                                             |                                         |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 950<br>: 1500<br>: 13.50<br>: +- 0.10 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 950<br>: -<br>: 7.00<br>: +- 0.20     |
| MEASUREMENT                                                         |                                         |
| Rated speed rpm                                                     | : 950                                   |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                      | : 520<br>: 7.80<br>: + 0.20             |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                      | : 800<br>: 9.85<br>: + 0.05             |
| FUEL DELIVERY CHA                                                   | RACTERISTICS                            |
| Aneroid pressure                                                    | <del></del>                             |
| hPa<br>Rated speed rpm                                              | : -<br>: 950                            |
| Del. quantity cm3/1000 strokes                                      | : 384.0                                 |
| Tolerance cm3/1000 strokes                                          | : + 4.0                                 |
| Check tolerance cm3/1000s.                                          | : <del>+</del> 6.0                      |
| cm3/TUUUS.                                                          | : +- 0.0                                |

| : -<br>: 500                 |
|------------------------------|
| : 189.0                      |
| : +- 1.0                     |
| : +- 4.0                     |
|                              |
|                              |
|                              |
|                              |
| 250                          |
| : 250                        |
| : 250<br>n: 4.40<br>: + 0.10 |
|                              |

cm3/1000 strokes : +- 3.0

6.0

4.0

8.0

Tolerance

Spreed Tolerance

Check tolerance cm3/1000s.

Check tolerance cm3/1000s.

cm3/1000 strokes :

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.06.97 Test oil : ISO 4113

Combination No. : 0 403 466 138JA

Injection pump

Pump designation : PES6MW100/120RS1178

EP type number : 0 413 406 160

Governor

Governer design. : RSV350...1250MW2A332

: -4

Governer no. : 0 420 085 220

Cust. part No. : 3921188

Customer-spec. information Customer : CDC

Motor

: 6 CT

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 017

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.50 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance "NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 14.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.10 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 143.5

| Tolerance cm3/1000 strokes : +- 1.0                                                             | Tolerance<br>cm3/1000 strokes : +- 1.0<br>Check tolerance                       |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Check tolerance cm3/1000s. : + 4.0                                                              | cm3/1000s. : +- 4.0<br>Spreed                                                   |
| Spreed                                                                                          | Tolerance cm3/1000 strokes : 4.0                                                |
| Tolerance - cm3/1000 strokes : 4.0 -                                                            | Check tolerance cm3/1000s. : 7.5                                                |
| Check tolerance cm3/1000s. : 7.5                                                                | CONTROL LEVER                                                                   |
| Rated speed rpm : 350                                                                           | control lever position degree : 99.0 tolerance degree : 4.0                     |
| Rack travel in mm: 6.80  Tolerance mm: + 0.10  Del. quantity  cm3/1000 strokes: 22.0  Tolerance | RATED SPEED rack travel mm : 13.10 Rated speed rpm : 1120 Tolerance 1/min : + 5 |
| cm3/1000 strokes : + 2.0 - Check tolerance cm3/1000s. : + 4.5 - Spreed                          | rack travel mm : 4.00 Rated speed rpm : 1255 Tolerance 1/min : + 15             |
| Tolerance - cm3/1000 strokes : 3.5 - Check tolerance - cm3/1000s. : 5.5                         | rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1400             |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR                                                     | rack travel mm : 4.00 Rated speed rpm : 1270 Tolerance 1/min : + 15             |
| GUIDE SLEEVE POSITION                                                                           | LOW IDLE                                                                        |
| control lever - 3 - Rated speed rpm : 800 -                                                     | control lever position degree : 75.0 tolerance degree : +- 4.0                  |
| Rack travel in mm: 0.65 Tolerance mm: +- 0.35                                                   | Setting point w/out bumper spring                                               |
| governor spring - pre-tension - click setting x : 5.00 -                                        | Rated speed rpm : 350 rack travel mm : 6.30 Tolerance mm : +- 0.10              |
| FULL LOAD DELTHERY AT EARL LOAD STOR                                                            | Rated speed rpm : 100                                                           |
| FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050                                    | CRT mm min. : > 19.00 Testing:                                                  |
| Aneroid pressure  hPa : 900  Del. quantity  cm3/1000 strokes : 143.5                            | Rated speed rpm : 350 rack travel mm : 6.80 Tolerance mm : +- 0.10              |
| M21                                                                                             | •                                                                               |

| rack travel mm<br>Rated speed rpm<br>Tolerance 1/min                |                                       |
|---------------------------------------------------------------------|---------------------------------------|
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 1050<br>: 14.10<br>: ← 0.05         |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                                |                                       |
| SETTING                                                             |                                       |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 500<br>: 900<br>: 14.10<br>: + 0.05 |
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm   | : 500<br>: -<br>: 10.70<br>: + 0.10   |
| MEASUREMENT                                                         |                                       |
| Rated speed rpm                                                     | : 500                                 |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                      | : 335<br>: 13.20<br>: + 0.20          |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                      | : 165<br>: 11.70<br>: ← 0.10          |
| FUEL DELIVERY CHA                                                   | RACTERISTICS                          |
| Aneroid pressure<br>hPa<br>Rated speed rpm                          | : -<br>: 500                          |
| Del. quantity<br>cm3/1000 strokes                                   | : 94.5                                |
| Tolerance cm3/1000 strokes                                          | : +- 2.0                              |
| Check tolerance                                                     | : +- 4.0                              |

| rack travel mm   | : |    | 20.00 |
|------------------|---|----|-------|
| Tolerance mm     | : | +- | 1.00  |
| Del. quantity    |   |    |       |
| cm3/1000 strokes | : |    | 170.0 |
| Tolerance        |   |    |       |
| cm3/1000 strokes | : | +- | 10.0  |
| Check tolerance  |   |    |       |
| cm3/1000s.       | : | +- | 15.0  |
|                  |   |    |       |

# LOW IDLE

| Rated speed rpm                                  | :        | 350            |
|--------------------------------------------------|----------|----------------|
| Rack travel in mm. Tolerance mm                  | :<br>: + | 6.80<br>- 0.10 |
| Del. quantity<br>cm3/1000 strokes<br>Tolerance   | :        | 22.0           |
| cm3/1000 strokes Check tolerance                 | : +      | - 2.0          |
| cm3/1000s. Spreed                                | : +      | - 4.5          |
| Tolerance<br>cm3/1000 strokes<br>Check tolerance | :        | 3.5            |
| cm3/1000s.                                       | :        | 5.5            |

End of test specification sheet

Rated speed rpm : 100

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.06.97 : ISO 4113

Combination No. : 0 400 846 522

Injection pump

Pump designation : PES6A90D410RS2667 EP type number : 0 410 896 080

Governor

Governer design. : RGV300...1400AB1065

: -4L

Governer no. : 0 420 212 168

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM 366

Power KW

: 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 har Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.30Tolerance mm :  $\leftarrow 0.05$ 

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-130-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 11.15 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

M23

| Tolerance cm3/1000 strokes :          | 3.0                                    | - Rated speed rpm :                              | 1400           |
|---------------------------------------|----------------------------------------|--------------------------------------------------|----------------|
| Check tolerance cm3/1000s.            | 4.5                                    | - Aneroid pressure<br>- hPa :<br>- Del. quantity | -              |
| -                                     |                                        | - cm3/1000 strokes :<br>- Tolerance              | 64.0           |
| Rated speed rpm :                     | 300                                    | - cm3/1000 strokes : +-<br>- Check tolerance     | 0.5            |
| Rack travel in mm :                   | 9 00                                   | - cm3/1000s. : +-<br>- Spreed                    | 2.5            |
|                                       | + 0.10                                 | Folerance cm3/1000 strokes :                     | 3.0            |
| cm3/1000 strokes :                    | 11.0                                   | - Check tolerance                                |                |
|                                       | +- 2.0                                 | - cm3/1000s. :                                   | 4.5            |
| Check tolerance cm3/1000s. :          | +- 4.0                                 |                                                  |                |
| Spreed<br>Tolerance                   | -                                      | CONTROL LEVER                                    |                |
| cm3/1000 strokes :<br>Check tolerance | 2.0                                    | - control lever<br>- position degree :           | 112 0          |
| cm3/1000s. :                          | 4.0                                    | tolerance degree : +                             |                |
|                                       | <del>-</del>                           | - RATED SPEED                                    |                |
| (B) SETTING OF INJECT WITH GOVERNOR   | CTION PUMP                             | - rack travel mm :<br>- Rated speed rpm :        | 10.10<br>1445  |
| WITH GOVERNOR                         | 7                                      | Tolerance 1/min : +-                             | - 5            |
| GUIDE SLEEVE TRAVEL                   |                                        | rack travel mm :                                 | 4.00           |
| Rated speed rpm :                     | 1450                                   | Rated speed rpm : Tolerance 1/min : +-           | 1555<br>· 15   |
| guide sleeve                          | -                                      | -                                                |                |
| travel mm :                           | 8.45<br>+- 0.05                        |                                                  | 0.50<br>- 0.50 |
| Tolerance mm :                        | <del>-</del>                           | Rated speed rpm :                                | 1650           |
| Rated speed rpm : guide sleeve        | 300                                    | -                                                |                |
| travel mm :                           | 1.05                                   | -                                                |                |
| Tolerance mm :                        | +- 0.25                                | - LOW IDLE                                       |                |
| Rated speed rpm : guide sleeve        | 600                                    | <u>-</u>                                         |                |
|                                       | 3.20                                   | - control lever                                  | 77.0           |
| Tolerance mm :                        | + 0.80                                 | - position degree :<br>- tolerance degree : +-   |                |
| Rated speed rpm :                     | 650                                    | _                                                |                |
| guide sleeve<br>travel mm :           | 3.95                                   | - Setting point w/out bu                         | mper spring    |
|                                       | + 0.25                                 | - Rated speed rpm :                              | 100            |
| CUITE OF FOUR POORTS                  |                                        | CRT mm min. :>                                   | 10.30          |
| GUIDE SLEEVE POSITIO                  | γ <b>ι</b> ν<br>Τ                      | Testing:                                         |                |
| control lever                         | 7<br>1                                 | - Rated speed rpm :                              | 300            |
| position degree :                     | 4                                      | - rack travel mm :                               | 9.00           |
|                                       | ······································ | - Tolerance mm : +-                              | - 0.10         |
| FULL LOAD DELIVERY A                  | AT FULL LOAD STOP                      | - Rated speed rpm :                              | 610            |
|                                       |                                        |                                                  |                |

| Rated speed rpm<br>rack travel mm<br>Tolerance mm                                                                                                           | : +           | 1400<br>11.15<br>- 0.05                |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------|-------------|
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                                                                                                           | ;             | 500<br>12.30<br>- 0.10                 |             |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                                                                                                           | :             | 900<br>11.95<br>- 0.15                 |             |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm                                                                                                           | :<br>:<br>: + | 1100<br>11.55<br>- 0.15                |             |
| Start interlock                                                                                                                                             | <del></del>   | ······································ | <del></del> |
| Rated speed rpm<br>Rated speed rpm                                                                                                                          | : ><br>: <    | 100<br>220                             |             |
| Check<br>speed 1/min                                                                                                                                        | ; >           | 80                                     |             |
|                                                                                                                                                             |               |                                        |             |
|                                                                                                                                                             | : <           | 240                                    |             |
| Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure                                                                                                      |               |                                        | 5           |
| speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa                                                                                                        | RACTI         | ERISTICS                               | 5           |
| speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm                                                                                        |               |                                        | 5           |
| Speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance                                               | RACTI         | 500<br>53.0                            | 5           |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes                                                              | RACTI         | ERISTICS<br>500                        | 5           |
| Speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance                                               | RACTI         | 500<br>53.0                            | 5           |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.                                   | RACTI         | 500<br>53.0<br>- 1.0                   | 5           |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s.  Aneroid pressure hPa Aneroid pressure hPa                         | RACTI         | 500<br>53.0<br>- 1.0                   | 5           |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.                                   | RACTI         | 500<br>53.0<br>- 1.0<br>- 3.5          | 5           |
| Aneroid pressure hPa Rated speed roms/1000 strokes Tolerance cm3/1000strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rom Del. quantity | RACTI         | 500<br>53.0<br>- 1.0<br>- 3.5          | 5           |

| Rated speed rpm<br>rack travel mm              | : |    | 100<br>17.20 |
|------------------------------------------------|---|----|--------------|
| Tolerance mm                                   | : | +- | 0.20         |
| Del. quantity<br>cm3/1000 strokes<br>Tolerance | : |    | 83.0         |
| cm3/1000 strokes<br>Check tolerance            | : | +  | 5.0          |
| cm3/1000s.                                     | : | +- | 8.0          |
|                                                |   |    |              |

| 1 | OM | TDI | F |
|---|----|-----|---|

| Rated speed rpm                                    | :         | 300          |  |
|----------------------------------------------------|-----------|--------------|--|
| Rack travel in mm<br>Tolerance mm<br>Del. quantity | :<br>: +- | 9.00<br>0.10 |  |
| cm3/1000 strokes<br>Tolerance                      | :         | 11.0         |  |
| cm3/1000 strokes<br>Check tolerance                | : +-      | 2.0          |  |
| cm3/1000S.<br>Spreed<br>Tolerance                  | : +-      | 4.0          |  |
| cm3/1000 strokes<br>Check tolerance                | :         | 2.0          |  |
| cm3/1000s.                                         | :         | 4.0          |  |

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 150 4113

: 24.06.97

Combination No. : 0 400 866 069

Injection pump

Pump designation : PES6A90D320/3RS2464 EP type number : 0 410 896 029

Governor

Governer design. : RSV300...1000A7C529R

Governer no. : 0 420 233 191

Cust. part No. :

Customer-spec. information

Customer

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : +- 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.20 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in ma : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm: 10.30 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 68.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : **←** 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

| Check tolerance cm3/1000s. : 4.5                              | control lever position degree : 65.0 tolerance degree : +- 4.0     |
|---------------------------------------------------------------|--------------------------------------------------------------------|
| Rated speed rpm : 300                                         | RATED SPEED + rack travel mm : 9.30                                |
| Rack travel in mm : 7.50 Tolerance mm : + 0.10 Del. quantity  | Rated speed rpm : 1025 Tolerance 1/min : +- 5                      |
| cm3/1000 strokes : 10.0 Tolerance                             | rack travel mm : 4.00 Rated speed rpm : 1055                       |
| cm3/1000 strokes : + 2.0<br>Check tolerance                   | Tolerance 1/min : + 15                                             |
| cm3/1000s. : +- 4.0<br>Spreed<br>Tolerance                    | rack travel mm : 1.00 Tolerance mm : + 0.70 Rated speed rpm : 1200 |
| cm3/1000 strokes : 4.5<br>Check tolerance<br>cm3/1000s. : 6.0 | rack travel mm : 4.00                                              |
| (8) SETTING OF INJECTION PUMP<br>WITH GOVERNOR                | LOW IDLE                                                           |
| GUIDE SLEEVE POSITION                                         | control lever position degree : 28.0 tolerance degree : + 4.0      |
| control lever position degree : - 3                           | Setting point w/out bumper spring                                  |
| Rated speed rpm : 800                                         | Rated speed rpm : 300 + rack travel mm : 8.00                      |
| Rack travel in mm : 0.65 Tolerance mm : + 0.35                | + Tolerance mm : + 0.10<br>+                                       |
| FULL LOAD DELIVERY AT FULL LOAD STOP                          | Rated speed rpm : 100  CRT mm min. :> 19.50                        |
| Rated speed rpm : 980                                         | + Testing:                                                         |
| Aneroid pressure hPa : -                                      | +                                                                  |
| Del. quantity cm3/1000 strokes : 68.0                         | Rated speed rpm : 300 rack travel mm : 7.50 Tolerance mm : + 0.10  |
| Tolerance cm3/1000 strokes : +- 0.5                           | rack travel mm : 2.00                                              |
| Check tolerance cm3/1000s. : + 2.5 Spreed                     | Rated speed rpm : 430 Tolerance 1/min : +- 30                      |
| Tolerance cm3/1000 strokes : 3.0                              | Rated speed rpm : 450                                              |
| Check tolerance cm3/1000s. : 4.5                              | CRT mm max. : < 1.00                                               |
|                                                               | TORQUE CONTROL Rated speed rpm : 980                               |
| CONTROL LEVER                                                 | + rack travel mm : 10.30                                           |

## Start interlock

Rated speed rpm : > 100

Check

speed 1/min :> 80

#### STARTING FUEL DELIVERY

100 Rated speed rpm : 20.25 rack travel mm : +- 0.75 Tolerance ma

Del. quantity

cm3/1000 strokes : 118.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. : +- 10.0

#### LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 7.50 Tolerance mm : +- 0.10 Del. quantity

cm3/1000 strokes : 10.0

Tolerance 2.0

cm3/1000 strokes : +-

Check tolerance cm3/1000s. 4.0

Spreed

Tolerance

cm3/1000 strokes : 4.5

Check tolerance

cm3/1000S.6.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.07.97 Test oil : ISO 4113

Combination No. : 0 400 866 207AA

Injection pump Pump designation : EP type number :

Governor

Governer design. :
Governer no. :

Cust. part No. : 3921147

Customer-spec. information
Customer : CUMMINS
Motor : & C 8.3

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 28.0 Tolerance bar : +- 1.0

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance "NW : +- C.75

Start of delivery mark

\*NW after s.o.d. : 10.00 Tolerance : +- 0.10

Check : +- U.10

check

tolerance \*NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.25

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 132.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

NO1

| Tolerance cm3/1000 strokes : 3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - Check tolerance<br>- cm3/1000s. : 8.0                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Check tolerance cm3/1000s. : 8.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - CONTROL LEVER                                                                                   |
| Rated speed rpm : 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -<br>- control lever<br>- position degree : 95.0<br>- tolerance degree : +- 4.0                   |
| Rack travel in mm: 5.60 - Tolerance mm: + 0.10 - Del. quantity - cm3/1000 strokes: 18.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | - RATED SPFED<br>- rack travel mm : 12.20<br>- Rated speed rpm : 1065<br>- Tolerance 1/min : +- 5 |
| Tolerance<br>cm3/1000 strokes : +- 2.0<br>Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -<br>- rack travel mm : 4.00<br>- Rated speed rpm : 1150                                          |
| cm3/1000S. : +- 4.5 Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | - Tolerance 1/min : + 5                                                                           |
| Tolerance - cm3/1000 strokes : 5.5 - Check tolerance - 7/10000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | - rack travel mm : 0.85<br>- Tolerance mm : +- 0.55<br>- Rated speed rpm : 1350                   |
| cm3/1000S. : 9.0 - (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | rack travel mm : 4.00<br>Rated speed rpm : 1150<br>Tolerance 1/min : +- 15                        |
| GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | LOW IDLE                                                                                          |
| control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - socialist control lever - so | control lever position degree : 78.0 tolerance degree : +- 4.0                                    |
| Rack travel in mm : 0.50 - Tolerance mm : +- 0.20 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Setting point w/out bumper spring                                                                 |
| governor spring - pre-tension - click setting x : 2.50 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | - Rated speed rpm : 400<br>- rack travel mm : 5.10<br>- Tolerance mm : +- 0.10                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - Rated speed rpm : 100                                                                           |
| FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | - CRT mm min. : > 19.50                                                                           |
| Rated speed rpm : 1000 - Aneroid pressure -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | - Testing:                                                                                        |
| hPa : Del. quantity - cm3/1000 strokes : 132.0 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - Rated speed rpm : 400<br>- rack travel mm : 5.60<br>- Tolerance mm : +- 0.10                    |
| Tolerance - cm3/1000 strokes : +- 1.0 - Check tolerance -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -<br>- rack travel mm : 2.00<br>- Rated speed rpm : 500                                           |
| cm3/1000s. : +- 3.0 Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | - Tolerance 1/min : + 30                                                                          |
| Tolerance - cm3/1000 strokes : 3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | - TORQUE CONTROL                                                                                  |

Rated speed rpm : 1000 rack travel mm : 13.25 Tolerance mm : +- 0.05

# STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : + 7.5
Check tolerance
cm3/1000s. : + 10.0

#### LOW IDLE

Rated speed rpm : 400 Rack travel in mm: 5.60 Tolerance mm :  $\leftarrow$  0.10 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.07.97 Test oil : ISO 4113

Combination No. : 0 400 866 208AI

Injection pump
Pump designation :
EP type number :

Governor

Governer design. : Governer no. :

Cust. part No. : 3921142

Customer-spec. information Customer : CUMMINS

# TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembty : 1 688 901 100

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

\*NW after s.o.d. : 10.00

Tolerance : +- 0.10

Check

tolerance \*NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 120.0

Tolerance

cm3/1000 strokes :  $\div$  1.0

Check tolerance cm3/1000s. : +- 3.5

Spreed

Tolerance

cm3/1000 strokes : 4.0

| <del>_</del>                              | <u> </u>                                              |
|-------------------------------------------|-------------------------------------------------------|
| Check tolerance cm3/1000s. : 6.5          | - CONTROL LEVER                                       |
|                                           | control lever position degree : 87.0                  |
| Rated speed rpm : 400                     | tolerance degree : +- 4.0                             |
| Rack travel in mm: 5.70                   | RATED SPEED                                           |
| Tolerance mm : + 0.10                     | rack travel mm : 11.10                                |
| Del. quantity                             | Rated speed rpm : 1065                                |
| cm3/1000 strokes : 17.0                   | Tolerance 1/min : +- 5                                |
| cm3/1000 strokes : + 2.0                  | rack travel mm : 4.00                                 |
| Check tolerance                           | - Rated speed rpm : 1090                              |
| cm3/1000s. : +- 4.5                       | Tolerance 1/min : +- 5                                |
| Spreed -                                  |                                                       |
| Tolerance - cm3/1000 strokes : 6.0        | - rack travel mm : C.85<br>- Tolerance mm : +- O.55   |
| Check tolerance                           | Rated speed rpm : 1300                                |
| cm3/1000s. : 8.0                          | _                                                     |
| +                                         | rack travel mm : 4.00                                 |
| (B) SETTING OF INJECTION PUMP             | - Rated speed rpm : 1090<br>- Tolerance 1/min : +- 15 |
| WITH GOVERNOR                             | Tolerance 1/min : +- 15                               |
| WITH GOVERNOON                            | -                                                     |
| +                                         |                                                       |
| CHARLE OF ECILE BOOKENAM                  | 1201.701.7                                            |
| GUIDE SLEEVE POSITION                     | - LOW IDLE                                            |
| -                                         |                                                       |
| control lever                             | - control lever                                       |
| position degree : FREE                    | position degree : 69.0                                |
| Rated speed rpm : 800                     | - tolerance degree : +- 4.0                           |
| Rack travel in mm: 0.50                   | Setting point w/out bumper spring                     |
| Tolerance mm : + 0.20                     |                                                       |
|                                           | Rated speed rpm : 400                                 |
| governor spring                           | rack travel mm : 5.20<br>Tolerance mm : +- 0.10       |
| pre-tension -<br>click setting x : 2.00 - | - Tolerance mm : +- 0.10                              |
|                                           | - Testing:                                            |
| SHILL LOAD DELTHEDY AT SHILL LOAD CTOD    | Poted speed (00                                       |
| FULL LOAD DELIVERY AT FULL LOAD STOP      | - Rated speed rpm : 400<br>- rack travel mm : 5.70    |
| Rated speed rpm : 1000                    | Tolerance mm : +- 0.10                                |
| Aneroid pressure                          | -                                                     |
| hPa : -                                   | rack travel mm : 2.00                                 |
| Del. quantity                             | Rated speed rpm : 450                                 |
| cm3/1000 strokes : 120.0                  | Tolerance 1/min : +- 30                               |
| Tolerance - cm3/1000 strokes : +- 1.0 -   |                                                       |
| Check tolerance                           | TORQUE CONTROL                                        |
| cm3/1000s. : + 3.5                        | - Rated speed rpm : 1000                              |
| Spreed                                    | rack travel mm : 12.15                                |
| Tolerance -                               | Tolerance mm : +- 0.05                                |
| cm3/1000 strokes : 4.0                    |                                                       |
| Check tolerance cm3/1000s. : 6.5          | -<br>-                                                |
| · · · · · · · · · · · · · · · · · · ·     |                                                       |

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 13.0

## LOW IDLE

400 Rated speed rpm : 5.70 Rack travel in mm : : +- C.10 Tolerance mm Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 01.07.97 Test oil : ISO 4113

Combination No. : 0 400 866 208AJ

Injection pump Pump designation : EP type number

Governor

Governer design. : Governer no.

Cust. part No. : 3927149

Customer—spec. information : CUMMINS Customer

## TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C 40 Tolerance \*C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 100 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : - 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

\*NW after s.o.d. : 10.00 Tolerance : + 0.10

Check

tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 120.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.5

Spreed

Tolerance

cm3/1000 strokes : 4.0

| †                                                                                                              |                                                 |
|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Check tolerance cm3/1000s. : 6.5                                                                               | CONTROL LEVER                                   |
| <u> </u>                                                                                                       | control lever                                   |
| †                                                                                                              | position degree : 87.0                          |
| Rated speed rpm : 400                                                                                          | tolerance degree : +- 4.0                       |
| Rack travel in mm: 5.70                                                                                        | RATED SPEED                                     |
| Tolerance mm : + 0.10                                                                                          | rack travel mm : 11.10                          |
| Del. quantity                                                                                                  | Rated speed rpm : 1065                          |
| cm3/1000 strokes : $17.0$ $\frac{1}{1}$                                                                        | Tolerance 1/min : +- 5                          |
| cm3/1000 strokes : + 2.0                                                                                       | rack travel mm : 4.00                           |
| Check tolerance                                                                                                | Rated speed rpm : 1090                          |
| cm3/1000s. : + 4.5                                                                                             | Tolerance 1/min : +- 5                          |
| Spreed + Tolerance +                                                                                           | rack travel mm : 0.85                           |
| cm3/1000 strokes : 6.0                                                                                         | Tolerance mm : +- 0.55                          |
| Check tolerance                                                                                                | Rated speed rpm : 1300                          |
| cm3/1000s. : 8.0                                                                                               |                                                 |
| Ī                                                                                                              | rack travel mm : 4.00<br>Rated speed rpm : 1090 |
| (B) SETTING OF INJECTION PUMP                                                                                  | Tolerance 1/min : +- 15                         |
| WITH GOVERNOR +                                                                                                |                                                 |
| †                                                                                                              |                                                 |
| 1                                                                                                              |                                                 |
| GUIDE SLEEVE POSITION                                                                                          | LOW IDLE                                        |
| †                                                                                                              |                                                 |
| control lever                                                                                                  | control lever                                   |
| position degree : FREE                                                                                         | position degree : 69.0                          |
| Rated speed rpm : 800                                                                                          | tolerance degree : +- 4.0                       |
| <b>†</b>                                                                                                       |                                                 |
| Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +                                                               | Setting point w/out bumper spring               |
| Toterance in . The o.20                                                                                        | Rated speed rpm : 400                           |
| governor spring                                                                                                | rack travel mm : 5.20                           |
| pre-tension +                                                                                                  | Tolerance mm : +- 0.10                          |
| click setting x : 2.00                                                                                         | Testing:                                        |
|                                                                                                                | resumg.                                         |
| FULL LOAD DELIVERY AT FULL LOAD STOP                                                                           | Rated speed rpm : 400                           |
| †                                                                                                              | rack travel mm : 5.70<br>Tolerance mm : +- 0.10 |
| Rated speed rpm : 1000 + Aneroid pressure +                                                                    | Tolerance mm : +- 0.10                          |
| hPa : - +                                                                                                      | rack travel mm : 2.00                           |
| Del. quantity                                                                                                  | Rated speed rpm : 450                           |
| cm3/1000 strokes : 120.0                                                                                       | Tolerance 1/min : +- 30                         |
|                                                                                                                |                                                 |
| Tolerance + 10                                                                                                 |                                                 |
| cm3/1000 strokes : + 1.0 +                                                                                     | TORQUE CONTROL                                  |
|                                                                                                                | Rated speed rpm : 1000                          |
| cm3/1000 strokes : + 1.0 + Check tolerance cm3/1000s. : + 3.5 + Spreed                                         | Rated speed rpm : 1000                          |
| cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance                                   | Rated speed rpm : 1000                          |
| <pre>cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0</pre> | Rated speed rpm : 1000                          |
| cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance                                   | Rated speed rpm : 1000                          |

# STARTING FUEL DELIVERY

| Rated speed rpm<br>rack travel mm<br>Tolerance mm | : 2  | 00<br>20.00<br>1.00 |
|---------------------------------------------------|------|---------------------|
| Del. quantity<br>cm3/1000 strokes<br>Tolerance    | : 1  | 45.0                |
| cm3/1000 strokes                                  | : +- | 10.0                |
| Check tolerance cm3/1000s.                        | : +  | 13.0                |

# LOW IDLE

| Rated speed rpm                                    | : |         | 400          |  |
|----------------------------------------------------|---|---------|--------------|--|
| Rack travel in mm<br>Tolerance mm<br>Del. quantity | • | +-      | 5.70<br>0.10 |  |
| cm3/1000 strokes                                   | : |         | 17.0         |  |
| Tolerance cm3/1000 strokes                         | : | +-      | 2.0          |  |
| Check tolerance                                    | : | <b></b> | 4.5          |  |
| Spreed<br>Tolerance                                |   |         |              |  |
| cm3/1000 strokes                                   | : |         | 6.0          |  |
| Check tolerance cm3/1000s.                         | : |         | 8.0          |  |
|                                                    |   |         |              |  |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

Test oil

: 25.06.97 : ISO 4113

Combination No. : 0 400 866 222

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C950L

Governer no. : 0 420 232 641

Cust. part No. : 0423 1601 KY

Customer-spec. information

Customer

: KHD-DMI

Motor

: F6L912/913\_NEU

Power KW

: 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

26.0 Test pressure bar :

Tolerance bar : +- 1.0

Prestroke mm : 3.00

: +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s.

: <del>+-</del> 3.0

| Spreed                                                                                                                                                                                                                                                                                                                                         | + Tolerance                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| opi ced                                                                                                                                                                                                                                                                                                                                        | - cm3/1000 strokes : 3.5                                                                                                                                                                                                                                                                                                |
| Tolerance                                                                                                                                                                                                                                                                                                                                      | + Check tolerance                                                                                                                                                                                                                                                                                                       |
| cm3/1000 strokes : 3.5                                                                                                                                                                                                                                                                                                                         | cm3/1000s. : 8.0                                                                                                                                                                                                                                                                                                        |
| Check tolerance                                                                                                                                                                                                                                                                                                                                | Ţ                                                                                                                                                                                                                                                                                                                       |
| cm3/1000s. : 8.0                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                                                | + CONTROL LEVER                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                                                | control lever                                                                                                                                                                                                                                                                                                           |
| Rated speed rpm : 325                                                                                                                                                                                                                                                                                                                          | position degree : 107.0                                                                                                                                                                                                                                                                                                 |
| Deal Americal Science 2 50                                                                                                                                                                                                                                                                                                                     | tolerance degree : +- 4.0                                                                                                                                                                                                                                                                                               |
| Rack travel in mm : 8.50 Tolerance mm : +- 0.10                                                                                                                                                                                                                                                                                                | + RATED SPEED                                                                                                                                                                                                                                                                                                           |
| Del. quantity                                                                                                                                                                                                                                                                                                                                  | rack travel mm : 10.35                                                                                                                                                                                                                                                                                                  |
| cm3/1000 strokes : 11.5                                                                                                                                                                                                                                                                                                                        | Rated speed rpm : 1295                                                                                                                                                                                                                                                                                                  |
| Tolerance                                                                                                                                                                                                                                                                                                                                      | + Tolerance 1/min : +- 5                                                                                                                                                                                                                                                                                                |
| cm3/1000 strokes : +- 2.0<br>Check tolerance                                                                                                                                                                                                                                                                                                   | + rack travel mm : 4.00                                                                                                                                                                                                                                                                                                 |
| cm3/1000s. : +- 4.5                                                                                                                                                                                                                                                                                                                            | Rated speed rpm : 1355                                                                                                                                                                                                                                                                                                  |
| Spreed                                                                                                                                                                                                                                                                                                                                         | + Tolerance 1/min : + 15                                                                                                                                                                                                                                                                                                |
| Tolerance                                                                                                                                                                                                                                                                                                                                      | +                                                                                                                                                                                                                                                                                                                       |
| cm3/1000 strokes : 5.5                                                                                                                                                                                                                                                                                                                         | rack travel mm : 0.85                                                                                                                                                                                                                                                                                                   |
| Check tolerance cm3/1000s. : 9.0                                                                                                                                                                                                                                                                                                               | + Tolerance mm : + 0.55<br>+ Rated speed rpm : 1550                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                | - Nated Speed (pill : 1550                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                | rack travel mm : 4.00                                                                                                                                                                                                                                                                                                   |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR                                                                                                                                                                                                                                                                                                    | + Rated speed rpm : 1400<br>+ Tolerance 1/min : + 15                                                                                                                                                                                                                                                                    |
| WITH GOVERNOR                                                                                                                                                                                                                                                                                                                                  | + Tolerance 1/min : +- 15                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                | +                                                                                                                                                                                                                                                                                                                       |
| CHINE SLEEVE DOSITION                                                                                                                                                                                                                                                                                                                          | <u> </u>                                                                                                                                                                                                                                                                                                                |
| GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                                                                          | LOW IDLE                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                | LOW IDLE                                                                                                                                                                                                                                                                                                                |
| control lever                                                                                                                                                                                                                                                                                                                                  | +                                                                                                                                                                                                                                                                                                                       |
| control lever<br>position degree : FREE                                                                                                                                                                                                                                                                                                        | control lever                                                                                                                                                                                                                                                                                                           |
| control lever                                                                                                                                                                                                                                                                                                                                  | control lever position degree : 73.0                                                                                                                                                                                                                                                                                    |
| control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50                                                                                                                                                                                                                                                            | control lever position degree : 73.0 tolerance degree : +- 4.0                                                                                                                                                                                                                                                          |
| control lever<br>position degree : FREE<br>Rated speed rpm : 800                                                                                                                                                                                                                                                                               | control lever position degree : 73.0                                                                                                                                                                                                                                                                                    |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20                                                                                                                                                                                                                                     | control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring                                                                                                                                                                                                                        |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension                                                                                                                                                                                                        | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325                                                                                                                                                                                                |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring                                                                                                                                                                                                                    | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325                                                                                                                                                                                                |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension                                                                                                                                                                                                        | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10                                                                                                                                                   |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension                                                                                                                                                                                                        | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100                                                                                                                            |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                           | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10                                                                                                                                                   |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250                                                                                                                   | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50                                                                                                     |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure                                                                                                  | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100                                                                                                                            |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250                                                                                                                   | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:                                                                                            |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0                                                    | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:                                                                                            |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance                                          | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:                                                                                           |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0                 | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : +- 0.10                        |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : +- 0.10  rack travel mm : 2.00 |
| control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0                 | control lever position degree : 73.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. :> 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : +- 0.10  rack travel mm : 2.00 |

TORQUE CONTROL

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 500

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

## LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 11.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 25,06,97 : ISO 4113

Combination No. : 0 400 866 235

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C951L

Governer no. : 0 420 232 642

Cust. part No. : 0423 2334 KY

Customer—spec. information Customer : KHD-DMI : F6L913 : 89.0 Motor

Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : **←** 0.75

# BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 3.0

Spreed

| Tolerance cm3/1000 strokes : 3.5                | theck tolerance cm3/1000s. : 8.0                             |
|-------------------------------------------------|--------------------------------------------------------------|
| Check tolerance cm3/1000s. : 8.0                |                                                              |
|                                                 | CONTROL LEVER                                                |
| Dahad aread area a 725                          | control lever                                                |
| Rated speed rpm : 325                           | <pre>position degree : 107.0 tolerance degree : +- 4.0</pre> |
| Rack travel in mm: 8.50 Tolerance mm: : +- 0.10 | + RATED SPEED                                                |
| Del. quantity cm3/1000 strokes : 11.5           | rack travel mm : 10.35                                       |
| Tolerance                                       | Rated speed rpm : 1295 Tolerance 1/min : +- 5                |
| cm3/1000 strokes : +- 2.0<br>Check tolerance    | rack travel mm : 4.00                                        |
| cm3/1000s. : + 4.5                              | Rated speed rpm : 1355                                       |
| Spreed<br>Tolerance                             | Tolerance 1/min : + 15                                       |
| cm3/1000 strokes : 5.5                          | rack travel mm : 0.85                                        |
| Check tolerance                                 | Tolerance mm : +- 0.55                                       |
| cm3/1000s. : 9.0                                | Rated speed rpm : 1550                                       |
|                                                 | rack travel mm : 4.00                                        |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR     | + Rated speed rpm : 1400<br>+ Tolerance 1/min : + 15         |
| GUIDE SLEEVE POSITION                           | LOW IDLE                                                     |
| control lever position degree : FREE            | t control lever                                              |
| Rated speed rpm : 800                           | position degree : 73.0                                       |
|                                                 | tolerance degree : +- 4.0                                    |
| Rack travel in mm: 0.50 Tolerance mm: + 0.20    | † + Setting point w/out bumper spring                        |
| governor spring                                 | + Rated speed rpm : 325                                      |
| pre-tension                                     | rack travel mm : 8.00                                        |
| click setting x : 4.25                          | ↑ Toterance mm : ← 0.10                                      |
| FULL LOAD DELIVERY AT FULL LOAD STOP            | Rated speed rpm : 100                                        |
|                                                 | CRT mm min. : > 19.50                                        |
| Rated speed rpm : 1250 Aneroid pressure         | + Testing:                                                   |
| hPa : -                                         | +                                                            |
| Del. quantity<br>cm3/1000 strokes : 76.0        | + Rated speed rpm : 325<br>+ rack travel mm : 8.50           |
| cm3/1000 strokes : 76.0<br>Tolerance            | Tolerance mm : 6.30                                          |
| cm3/1000 strokes : + 1.0                        | +                                                            |
| Check tolerance cm3/1000s. : + 3.0              | rack travel mm : 2.00 Rated speed rpm : 595                  |
| Spreed                                          | Tolerance 1/min : + 30                                       |
| Tolerance                                       | †                                                            |
| cm3/1000 strokes : 3.5                          | + TORQUE CONTROL                                             |
|                                                 | 1                                                            |

Rated speed rpm : 1250 rack travel mm : 11.35 : <del>+-</del> 0.05 Tolerance mm

Rated speed rpm : 750 rack travel mm : 11.80 Tolerance mm : + 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 750

Del. quantity

cm3/1000 strokes : 70.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

## STARTING FUEL DELIVERY

100 Rated speed rpm : rack travel mm : 17.00
Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. :  $\leftarrow$  10.0

## LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 8.50 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : <del>←</del> 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s.9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24,06,97 Edition Test oil : ISO 4113

Combination No. : 0 400 876 109

Injection pump

Pump designation : PES6A80D410RS2085X EP type number : 0 410 886 045

Governor

Governer design. : RSV350...1300A2C1005

: 0 420 232 405 Governer no.

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : 0M352 Power KW : 62.0

#### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inler

temp. °C 40 Tolerance \*C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.20 : **←** 0.05 Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : **←** 0.75

# BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 8.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 39.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. ; +- 2.0

Spreed

| Tolerance                         |                     | +                                      |
|-----------------------------------|---------------------|----------------------------------------|
| cm3/1000 strokes                  | : 2.0               | CONTROL LEVER                          |
| Check tolerance                   | . 7 5               | + control loves                        |
| cm3/1000s.                        | : 3.5               | control lever                          |
|                                   |                     | + position degree : 106.0              |
|                                   |                     | tolerance degree : +- 4.0              |
| Rated speed rpm                   | : 350               | + RATED SPEED                          |
| Del. quantity                     |                     | +                                      |
| cm3/1000 strokes                  | : 11.0              | + rack travel mm : 1.00                |
| Tolerance                         |                     | + Tolerance mm : + 0.70                |
| cm3/1000 strokes                  | : <del></del> 1.0   | + Rated speed rpm : 1575               |
| Check tolerance                   |                     | +                                      |
| cm3/1000s.                        | : +- 2.5            | rack travel mm : 4.00                  |
| Spreed                            |                     | + Rated speed rpm : 1420               |
| Tolerance                         |                     | + Tolerance 1/min : + 15               |
| cm3/1000 strokes                  | : 2.0               | +                                      |
| Check tolerance                   |                     | + ASSEMBLY GOVERNOR SETTING            |
| cm3/1000S.                        | : 3.5               | +                                      |
|                                   |                     | † rack travel mm : 8.00                |
|                                   |                     | +                                      |
| (B) SETTING OF IN                 | NECTION PUMP        | +                                      |
| WITH GOVERNOR                     |                     | + rack travel mm : 8.00                |
|                                   |                     | †                                      |
|                                   |                     | †                                      |
|                                   |                     | + rack travel mm : 8.00                |
| GUIDE SLEEVE POSI                 | TION                | +                                      |
|                                   |                     | †                                      |
|                                   |                     | rack travel mm : 8.00                  |
| control lever                     | -                   | †                                      |
| position degree                   |                     | †                                      |
| Rated speed rpm                   | : 800               | rack travel mm : 8.00                  |
| Dook Annual in me                 | 0.45                | †                                      |
| Rack travel in mm<br>Tolerance mm |                     | rack travel mm : 8.00                  |
| roterance ins                     | ; += 0.33           | rack travet min . 8.00                 |
| governor spring                   |                     | I                                      |
| pre-tension                       |                     | LOW IDLE                               |
| click setting x                   | • 4.00              | 1 204 1022                             |
| cered securing A                  |                     | Setting point w/out bumper spring      |
|                                   |                     | + staring points in our samper opining |
| FULL LOAD DELIVER                 | Y AT FULL LOAD STOP | + Rated speed rpm : 350                |
|                                   |                     | rack travel mm : 6.90                  |
| Rated speed rpm                   | : 1300              | + Tolerance mm : + 0.10                |
| Aneroid pressure                  |                     | +                                      |
| hPa                               | : -                 | + Rated speed rpm : 100                |
| Del. quantity                     |                     | +                                      |
| cm3/1000 strokes                  | : 39.5              | + CRT mm min. : > 17.50                |
| Tolerance                         |                     | +                                      |
| cm3/1000 strokes                  | : +- 0.5            | † Testing:                             |
| Check tolerance                   |                     | +                                      |
| cm3/1000s.                        | : +- 2.0            | + rack travel mm : 2.00                |
| Spreed                            |                     | + Rated speed rpm : 620                |
| Tolerance                         |                     | + Tolerance 1/min : + 30               |
| cm3/1000 strokes                  | : 2.0               | +                                      |
| Check tolerance                   | • •                 | +                                      |
| cm3/1000s.                        | : 3.5               | + TORQUE CONTROL                       |
|                                   | •                   | + Rated speed rpm : 1300               |
|                                   |                     | + rack travel mm : 8.05                |
|                                   |                     |                                        |

Tolerance mm : +- 0.05

Rated speed rpm : 500 9.35 rack travel mm : + 0.05Tolerance mm

700 Rated speed rpm : rack travel mm : 9.30 : +- 0.10 Tolerance mm

Rated speed rpm : 950 rack cravet mm : 8.45 Tolerance mm :  $\leftarrow$  0.15

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 38.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.: +- 3.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.70 Tolerance mm :  $\leftarrow 0.20$ Del. quantity

cm3/1000 strokes : 83.0

Tolerance cm3/1000 strokes : +- 5.0

Check tolerance

cm3/1000s. : +- 8.0

#### LOW IDLE

350 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.: + 2.5

Spreed

Tolerance

cm3/1000 strokes : 2.0

Check tolerance cm3/1000s. : 3.5

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.06.97 : ISO 4113

Combination No. : 0 400 876 310

Injection pump

Pump designation : PES6A90D410RS2596 EP type number : 0 410 896 073

Governor

Governer design. : RSV350...1200A0C1148

: -1L

: 0 420 232 456 Governer no.

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM352A : 110.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 Tolerance bar : ← 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

: 2.05 Prestroke mm : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm: 12.15 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 73.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

: +- 2.5 cm3/1000s.

Spreed

| Tolerance cm3/1000 strokes : 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <del> </del>                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Chart Ash and a second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second | CONTROL LEVER                                                   |
| Check tolerance cm3/1000s. : 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | tontrol lever position degree : 111.0 tolerance degree : +- 4.0 |
| Rated speed rpm : 350 Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RATED SPEED                                                     |
| cm3/1000 strokes : 14.0 Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | rack travel mm : 0.85<br>Tolerance mm : + 0.55                  |
| cm3/1000 strokes : +- 2.0 Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Rated speed rpm : 1460                                          |
| cm3/1000s. : +- 4.0<br>Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | rack travel mm : 4.00<br>Rated speed rpm : 1360                 |
| Tolerance<br>cm3/1000 strokes : 2.5<br>Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Tolerance 1/min : +- 15                                         |
| cm3/1000s. : 4.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                 |
| (B) SETTING OF INJECTION PUMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LOW IDLE                                                        |
| WITH GOVERNOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Setting point w/out bumper spring                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Rated speed rpm : 350                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | rack travel mm : 8.50<br>Tolerance mm : +- 0.10                 |
| GUIDE SLEEVE POSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Tolerance mm : +- 0.1C                                          |
| control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Rated speed rpm : 100                                           |
| position degree : - 3 Rated speed rpm : 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CRT mm min. : > 19.50                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | † Testing:                                                      |
| Rack travel in mm: 0.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2.00                                                            |
| Tolerance mm : +- 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | rack travel mm : 2.00                                           |
| governor opring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | + Rated speed rpm : 510<br>+ Tolerance 1/min : + 30             |
| pre-tension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1 Toterance Militi : +- 30                                      |
| click setting x : 4.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TORQUE CONTROL                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Rated speed rpm : 1180                                          |
| FULL LOAD DELIVERY AT FULL LOAD STOP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | rack travel mm : 12.15                                          |
| Detect energy - 4400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Tolerance mm : +- 0.05                                          |
| Rated speed rpm : 1180 Aneroid pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Pated speed rpm · 705                                           |
| hPa : 900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Rated speed rpm : 725<br>rack travel mm : 13.65                 |
| Del. quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | rack travel mm : 13.65<br>Tolerance mm : + 0.05                 |
| cm3/1000 strokes : 73.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1                                                               |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Rated speed rpm : 900                                           |
| cm3/1000 strokes : + 0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | rack travel mm : 13.10                                          |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Tolerance mm : +- 0.10                                          |
| cm3/1000s. : +- 2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | †                                                               |
| Spreed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ANEDOTO / AL TYTUDE                                             |
| Tolerance cm3/1000 strokes : 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | + ANEROID/ALTITUDE<br>+ COMPENSATOR TEST                        |
| Check tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T COMPENSATOR LEST                                              |
| cm3/1000s. : 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <u></u>                                                         |
| · 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SETTING                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | +                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | •                                                               |

| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                                           | : 500<br>: 900<br>: 13.65<br>: + 0.05          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Rated speed rpm<br>Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                                           | : 500<br>: –<br>: 11.55<br>: + 0.05            |
| MEASUREMENT                                                                                                                                                 |                                                |
| Rated speed rpm                                                                                                                                             | : 500                                          |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                                                              | : 235<br>: 12.10<br>: + 0.10                   |
| Pressure hPa<br>rack travel mm<br>Tolerance mm                                                                                                              | : 450<br>: 12.65<br>: + 0.05                   |
| FUEL DELIVERY CHA                                                                                                                                           | RACTERISTICS                                   |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.                                   |                                                |
| Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Check tolerance cm3/1000S. | : 900<br>: 850<br>: 76.0<br>: ← 2.0<br>: ← 4.5 |
| Aneroid pressure<br>hPa<br>Rated speed rpm<br>Del. quantity<br>cm3/1000 strokes<br>Tolerance<br>cm3/1000 strokes                                            | : -<br>: 500<br>: 52.0<br>: + 1.0              |
|                                                                                                                                                             | <del>-</del>                                   |

| Check tolerance cm3/1000s.                                         | : +-           | 3.0                  |  |
|--------------------------------------------------------------------|----------------|----------------------|--|
| STARTING FUEL DEL                                                  | IVERY          |                      |  |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm<br>Del. quantity | :<br>:<br>: +- | 100<br>16.20<br>0.20 |  |
| cm3/1000 strokes<br>Tolerance                                      | :              | 83.0                 |  |
| cm3/1000 strokes<br>Check tolerance                                | : +-           | 5.0                  |  |
| cm3/1000s.                                                         | : +-           | 8.0                  |  |
| LOW IDLE                                                           | <del></del>    |                      |  |
| Rated speed rpm<br>Del. quantity                                   | :              | 350                  |  |
| cm3/1000 strokes<br>Tolerance                                      | :              | 14.0                 |  |
| cm3/1000 strokes<br>Check tolerance                                | : +-           | 2.0                  |  |
| cm3/1000s.<br>Spreed                                               | : +-           | 4.0                  |  |
| Tolerance                                                          |                |                      |  |
| Tolerance cm3/1000 strokes                                         | :              | 2.5                  |  |
|                                                                    | :              | 2.5<br>4.5           |  |

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 19.06.97

Test oil

: ISO 4113

Combination No. : 0 400 876 397

Injection pump

Pump designation : PES6A95D41ORS2797 EP type number : 0 410 896 900

Governor

Governer design. : RSV350...1400A0C2006

: -8L

Governer no.

: 0 420 232 580

Cust. part No. :

Customer-spec. information Customer : MB-NFZ : OM 366 Motor Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet

temp. °C : <del>+</del> 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : **←** 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 10.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 62.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s.

: +- 3.0

| Spreed                                                        | Tolerance : 3.5                                                                 |
|---------------------------------------------------------------|---------------------------------------------------------------------------------|
| Tolerance - 3.5                                               | Check tolerance cm3/1000s. : 8.0                                                |
| Check tolerance                                               |                                                                                 |
| cm3/1000S. : 8.0                                              | CONTROL LEVER                                                                   |
|                                                               | control lever                                                                   |
| Rated speed rpm : 350                                         | position degree : 111.0<br>tolerance degree : +- 4.0                            |
| Rack travel in mm : 8.10 Tolerance mm : +- 0.10               |                                                                                 |
| Del. quantity cm3/1000 strokes : 8.0                          | ASSEMBLY GOVERNOR SETTING                                                       |
| Tolerance                                                     | Rated speed rpm : 1430                                                          |
| cm3/1000 strokes : +- 2.0<br>Check tolerance                  | rack travel mm : 9.10                                                           |
| cm3/1000s. : +- 4.5<br>Spreed                                 | + Rated speed rpm : 1496<br>+ Tolerance 1/min : + 6                             |
| Tolerance - 5.5                                               | rack travel mm : 4.00                                                           |
| Check tolerance cm3/1000s. : 9.0                              | rack travel mm : 1.00 Tolerance mm : +- 0.70                                    |
| -                                                             | Rated speed rpm : 1650                                                          |
| (B) SETTING OF INJECTION PUMP WITH GOVERNOR                   | Rated speed rpm : 1431<br>rack travel mm : 9.10                                 |
| GUIDE SLEEVE POSITION                                         | Rated speed rpm : 1497 Tolerance 1/min : +- 6 rack travel mm : 4.00             |
| control lever position degree : - 3 Rated speed rpm : 800     | rack travel mm : 1.00 Tolerance mm : +- 0.70 Rated speed rpm : 1650             |
| Rack travel in mm : 0.65 Tolerance mm : +- 0.35               | Rated speed rpm : 1432<br>rack travel mm : 9.10                                 |
| governor spring pre-tension click setting x : 4.50            | + Rated speed rpm : 1498<br>+ Tolerance 1/min : +- 6<br>- rack travel mm : 4.00 |
| FULL LOAD DELIVERY AT FULL LOAD STOP                          | rack travel mm : 1.00 Tolerance mm : + 0.70                                     |
| Rated speed rpm : 1380 Aneroid pressure hPa : -               | Rated speed rpm : 1650                                                          |
| Del. quantity cm3/1000 strokes : 62.0 Tolerance               | Rated speed rpm : 1433<br>rack travel mm : 9.10                                 |
| cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0 | Rated speed rpm : 1499 Tolerance 1/min : +- 6 rack travel mm : 4.00             |
| Spreed : +- 3.0                                               | rack travel mm : 4.00                                                           |
|                                                               | 1                                                                               |

| Tolerance mm : +- 0.70 Rated speed rpm : 1650                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rated speed rpm : 400 rack travel mm : 11.45 Tolerance mm : +- 0.15 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Rated speed rpm : 1434 rack travel mm : 9.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Rated speed rpm : 630 rack travel mm : 11.05                        |
| Rated speed rpm : 1500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Tolerance mm : +- 0.15                                              |
| Tolerance 1/min : + 6 + rack travel mm : 4.00 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rated speed rpm : 925                                               |
| THE CT AVEC THAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | rack travel mm : 10.55                                              |
| rack travel mm : 1.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Tolerance mm : +- 0.15                                              |
| Tolerance mm : +- 0.70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                     |
| Rated speed rpm : 1650                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                     |
| <del>-</del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                     |
| Rated speed rpm : 1435                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FUEL DELIVERY CHARACTERISTICS                                       |
| rack travel mm : 9.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                     |
| Rated speed rpm : 1501                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Aneroid pressure                                                    |
| Tolerance 1/min : + 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | hPa : -                                                             |
| rack travel mm : 4.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Rated speed rpm : 400                                               |
| +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Del. quantity                                                       |
| rack travel mm : 1.00 + Tolerance mm : + 0.70 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cm3/1000 strokes : 50.5<br>Tolerance                                |
| Tolerance mm : + 0.70 + Rated speed rpm : 1650 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | cm3/1000 strokes : +- 2.0                                           |
| Nacco Speca (pin : 1050                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Check tolerance                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cm3/1000s. : +- 4.0                                                 |
| LOW IDLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                     |
| †                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ananaid procesure                                                   |
| control lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Aneroid pressure<br>hPa : -                                         |
| position degree : 78.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Rated speed rpm : 630                                               |
| tolerance degree : + 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Del. quantity                                                       |
| +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | cm3/1000 strokes : 51.0                                             |
| Setting point w/out bumper spring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Tolerance cm3/1000 strokes : +- 2.0                                 |
| Rated speed rpm : 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Check tolerance                                                     |
| The control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the co | cm3/1000s. : +- 4.0                                                 |
| CRT mm min. : > 19.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                     |
| Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Annuald                                                             |
| Testing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Aneroid pressure<br>hPa : -                                         |
| Rated speed rpm : 350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Rated speed rpm : 925                                               |
| rack travel mm : 8.10 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Del. quantity                                                       |
| Tolerance mm : + 0.10 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | cm3/1000 strokes : 59.0                                             |
| rack travel mm : 2.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Tolerance cm3/1000 strokes : +- 2.0                                 |
| Rated speed rpm : 510                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Check tolerance                                                     |
| Tolerance 1/min : + 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | cm3/1000s. : +- 4.0                                                 |
| +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                     |
| SET IDLE AUXILIARY SPRING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                     |
| Rated speed rpm : 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | STARTING FUEL DELIVERY                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rated speed rpm : 100                                               |
| TORQUE CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | rack travel mm : 14.80 Tolerance mm : +- 0.20                       |
| Rated speed rpm : 1380 + rack travel mm : 10.15 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Tolerance mm : +- 0.20 Del. quantity                                |
| Tolerance mm : +- 0.05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | cm3/1000 strokes : 83.0                                             |
| TO COLUMN TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO TH |                                                                     |

Tolerance cm3/1000 strokes : +- 7.5 Check tolerance

cm3/1000s. : + 10.0

# LOW IDLE

Rated speed rpm : 350 Rack travel in mm: 8.10 : + 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.06.97 : ISO 4113

Combination No. : F 002 A0Z 053

Injection pump

Pump designation : PES6A95D320/3RS2916

EP type number : F 002 A10 010

Governor

Governer design. : RSV475...1050AOC933R

Governer no. : F 002 A20 239

Cust. part No. : 3283920

Customer-spec. information Customer : CUMMINS Motor : óBT Power KW : 107.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

. u-ol : -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance : + 0.10

Check

tolerance \*NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20 Tolerance mm : +- 0.05

Nr. +

|                                                | + Aneroid pressure                                 |
|------------------------------------------------|----------------------------------------------------|
| Del. quantity<br>cm3/1000 strokes : 104.8      | + hPa : 800<br>+ Del. quantity                     |
| Tolerance                                      | cm3/1000 strokes : 104.8<br>Tolerance              |
| cm3/1000 strokes : + 1.0                       | cm3/1000 strokes : + 1.0<br>Check tolerance        |
| Check tolerance cm3/1000s. : +- 3.0            | + cm3/1000s. : + 3.0<br>+ Spreed<br>+ Tolerance    |
| Spreed                                         | cm3/1000 strokes : 4.0 Check tolerance             |
| Tolerance<br>cm3/1000 strokes : 4.0            | cm3/1000s. : 6.5                                   |
| Check tolerance cm3/1000s. : 6.5               | CONTROL LEVER                                      |
|                                                | + control lever                                    |
| ,                                              | position degree : 104.0                            |
| Rated speed rpm : 475                          | tolerance degree : +- 4.0                          |
| Rack travel in mm : 5.40                       | RATED SPEED                                        |
| Tolerance mm : + 0.10                          | + rack travel mm : 11.20                           |
| Del. quantity                                  | + Rated speed rpm : 1110                           |
| cm3/1000 strokes : 18.8                        | + Tolerance 1/min : + 5                            |
| Tolerance cm3/1000 strokes : +- 2.0            | rack travel mm : 4.00                              |
| Check tolerance                                | rack travel mm : 4.00 Rated speed rpm : 1200       |
| cm3/1000s. : +- 4.5                            | Tolerance 1/min : + 5                              |
| Spreed                                         | +                                                  |
| Tolerance                                      | + rack travel mm : 0.85                            |
| cm3/1000 strokes : 6.0                         | + Tolerance mm : + 0.55                            |
| Check tolerance cm3/1000s. : 8.0               | + Rated speed rpm : 1300                           |
| cm3/1000s. : 8.0                               | + rack travel mm : 4.00                            |
|                                                | + Rated speed rpm : 1200                           |
| (B) SETTING OF INJECTION PUMP                  | + Tolerance 1/min : +- 15                          |
| WITH GOVERNOR                                  | +                                                  |
|                                                | †                                                  |
|                                                |                                                    |
| GUIDE SLEEVE POSITION                          | + LOW IDLE                                         |
|                                                | Ī                                                  |
| control lever                                  | - control lever                                    |
| position degree : FREE                         | position degree : 85.0                             |
| Rated speed rpm : 800                          | tolerance degree : + 4.0                           |
| Dool though in my A 0 50                       | + Control Lever difference                         |
| Rack travel in mm : 0.50 Tolerance mm : + 0.20 | + Grad : 19.0                                      |
| Toterance mm                                   | tolerance degree : +- 6.0                          |
| governor spring                                | +                                                  |
| pre-tension                                    | + Setting point w/out bumper spring                |
| click setting $x$ : 4.00                       | +                                                  |
|                                                | Rated speed rpm : 475                              |
| FULL LOAD DELIVERY AT FULL LOAD STOP           | + rack travel mm : 4.90<br>+ Tolerance mm : + 0.10 |
| FULL LUMD DELIVERT AT FULL LUMD STUF           | T TOTAL CHAIR U. 1U                                |
| Rated speed rpm : 1050                         | Rated speed rpm : 100                              |

| CRT mm min.                                          | : > 19.00                    | Tolerance cm3/1000 strokes : + 2.0 Check tolerance                               |
|------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------|
| Testing:                                             |                              | cm3/1000s. : +- 4.0                                                              |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm    | : 5.40                       | Aneroid pressure  hPa : - Rated speed rpm : 500                                  |
| rack travel mm<br>Rated speed rpm<br>Tolerance 1/min | : 2.00<br>: 580<br>: + 30    | Del. quantity  cm3/1000 strokes : 79.0  Tolerance  cm3/1000 strokes : + 1.0      |
| TORQUE CONTROL<br>Rated speed rpm<br>rack travel mm  | : 12.20                      | - Check tolerance - cm3/1000s. : + 3.0                                           |
| Tolerance mm                                         |                              | STARTING FUEL DELIVERY                                                           |
| Rated speed rpm<br>rack travel mm<br>Tolerance mm    | : 800<br>: 12.60<br>: + 0.20 | Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity |
| ANEROID/ALTITUDE<br>COMPENSATOR TEST                 |                              | cm3/1000 strokes : 120.5<br>Tolerance<br>cm3/1000 strokes : +- 10.0              |
| SETTING                                              |                              | + Check tolerance<br>+ cm3/1600s. : + 15.0                                       |
| Rated speed rpm<br>Pressure hPa                      | : 500<br>: 800               | +                                                                                |
| Rated speed rpm<br>Pressure hPa                      | : 500<br>: -                 | LCW IDLE                                                                         |
| rack travel mm<br>Tolerance mm                       |                              | Rated speed rpm : 475                                                            |
| MEASUREMENT                                          |                              | + Rack travel in mm : 5.40<br>+ Tolerance mm : + 0.10<br>+ Del. quantity         |
| Rated speed rpm                                      | : 500                        | cm3/1000 strokes : 18.8<br>Tolerance                                             |
| Pressure hPa<br>rack travel mm                       | : 700<br>: 12.10             | cm3/1000 strokes : + 2.0<br>Check tolerance                                      |
| Tolerance mm                                         | : + 0.20                     | + cm3/1000s. : +- 4.5<br>+ Spreed                                                |
| Pressure hPa<br>rack travel mm<br>Tolerance mm       | : 11.60                      | + Tolerance<br>+ cm3/1000 strokes : 6.0<br>+ Check tolerance                     |
| rocerance min                                        | 0.20                         | cm3/1000s. : 8.0                                                                 |
| FUEL DELIVERY CHA                                    | ARACTERISTICS                |                                                                                  |
| Aneroid pressure hPa                                 | : 800                        | End of test specification sheet                                                  |
| Rated speed rpm<br>Del. quantity                     |                              | †                                                                                |
| cm3/1000 strokes                                     | : 112.0                      | T                                                                                |